CONTROL
DATA

60000121

Mainframe Power and
Environmental Subsystem
Theory and Diagrams

DIAGRAMS

CYBER 960/962
Computer System

REVISION RECORD

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A (08-26-88)	Manual released.
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Publication No.
60000121

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MANUAL TO EQUIPMENT LEVEL CORRELATION SHEET

This manual reflects the equipment configurations listed below.

EXPLANATION: Locate the equipment type and series number, as shown on the equipment FCO log, in the list below. Immediately to the right of the series number is an FCO number. If that number and all of the numbers underneath it match all of the numbers on the equipment FCO log, then this manual accurately reflects the equipment.

EQUIPMENT TYPE	SERIES	WITH FCOs	COMMENTS
AD121-A	01	-	Released
AD122-A	01	-	Released
AT478-B	01	-	Released
AT481-B	01	-	Released
AT511-A	01	-	Released
AT512-A	01	-	Released
GD311-A	01	-	Released

EQUIPMENT TYPE	SERIES	WITH FCOs	COMMENTS

This manual is for use by training personnel to understand the CONTROL DATA® CYBER® 960/962 power and environmental subsystem and for use by qualified Engineering Services personnel in maintaining and repairing it.

The power and environmental subsystem consists of the GD311-A power unit plus power and environmental components of the:

- AD121-A CPU Cabinet - contains Central Processor 0 (CP-0), Central Memory Control, and Central Memory (CM)
- AD122-A Optional CP-1
- AT478-B/AT511-A Input/Output Unit (IOU)
- AT481-B/AT512-A Optional IOU Expansion
- AT511-A Optional Standalone IOU
- AT512-A Optional Standalone IOU Expansion

CONVENTIONS

New features, as well as changes, deletions, and additions to this manual, are indicated by vertical bars in the margins or by a dot near the page number if the entire page is affected. A bar by the page number indicates pagination rather than content has changed.

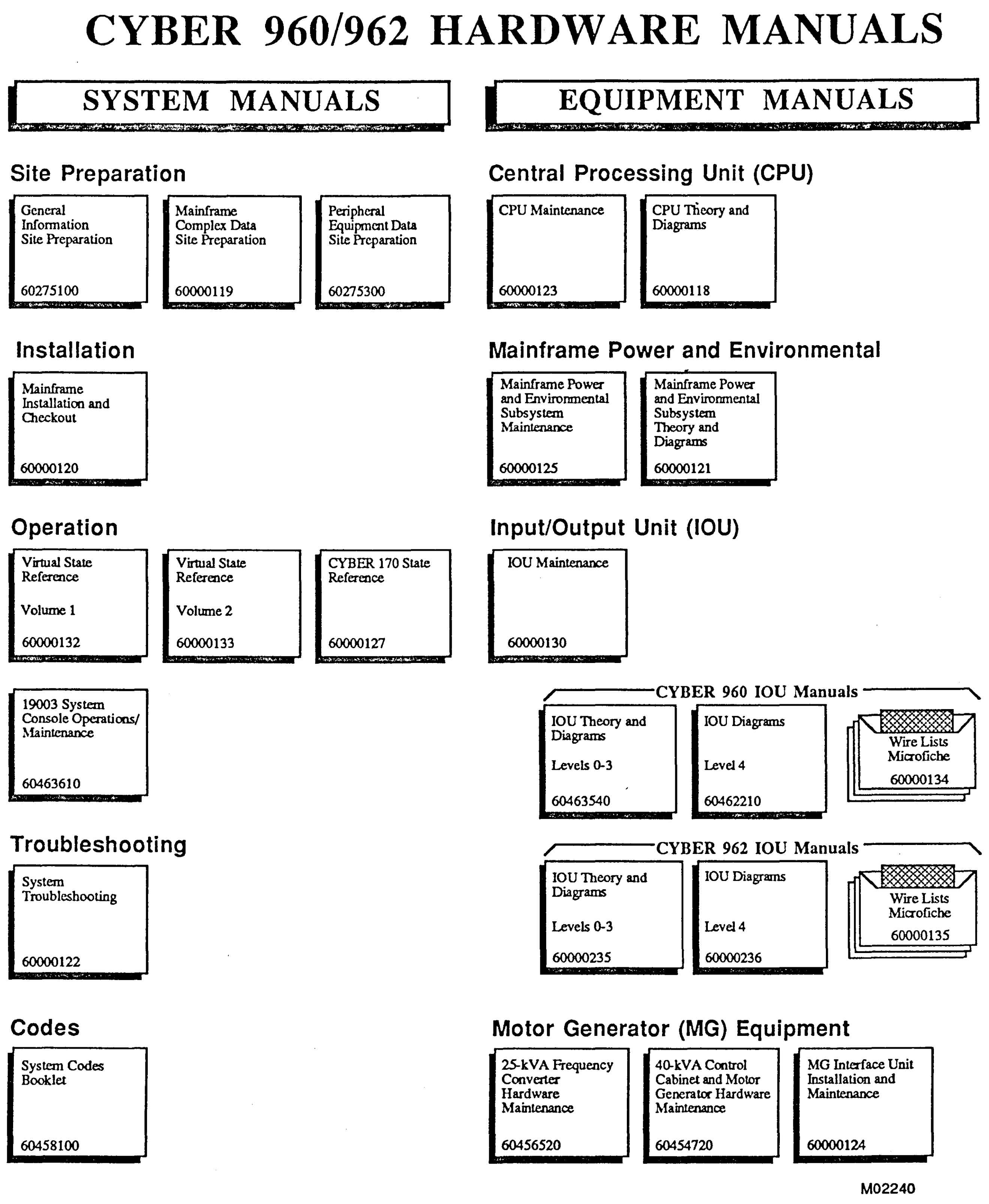
RELATED MANUALS

This manual and other related manuals are shown in the CYBER 960/962 Hardware Manuals set figure that follows.

ADDITIONAL RELATED MANUALS

Additional manuals referenced in this manual but not listed in the CYBER 960/962 Hardware Manuals set figure, include:

Title	Publication Number
MSL15X Model Independent Reference Manual	60469390
CYBER 96X MSL Reference Manual	60000292
Key to Logic Symbols Manual	60458120


CYBER 960/962 HARDWARE MANUALS
SYSTEM MANUALS
EQUIPMENT MANUALS
Site Preparation
General Information Site Preparation 60275100
Mainframe Complex Data Site Preparation 60000119
Peripheral Equipment Data Site Preparation 60275300
Central Processing Unit (CPU)
CPU Maintenance 60000123
CPU Theory and Diagrams 60000118
Installation
Mainframe Installation and Checkout 60000120
Mainframe Power and Environmental
Mainframe Power and Environmental Subsystem Maintenance 60000125
Mainframe Power and Environmental Subsystem Theory and Diagrams 60000121
Operation
Virtual State Reference Volume 1 60000132
Virtual State Reference Volume 2 60000133
CYBER 170 State Reference 60000127
19003 System Console Operations/ Maintenance 60463610
Input/Output Unit (IOU)
IOU Maintenance 60000130
CYBER 960 IOU Manuals
IOU Theory and Diagrams Levels 0-3 60463540
IOU Diagrams Level 4 60462210
Wire Lists Microfiche 60000134
CYBER 962 IOU Manuals
IOU Theory and Diagrams Levels 0-3 60000235
IOU Diagrams Level 4 60000236
Wire Lists Microfiche 60000135
Troubleshooting
System Troubleshooting 60000122
Codes
System Codes Booklet 60458100
Motor Generator (MG) Equipment
25-kVA Frequency Converter Hardware Maintenance 60456520
40-kVA Control Cabinet and Motor Generator Hardware Maintenance 60454720
MG Interface Unit Installation and Maintenance 60000124
M02240

RADIO FREQUENCY WARNING

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a class A computing device and peripheral computing devices pursuant to Subpart J of part 15 of the FCC Rules which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

SUBMITTING COMMENTS

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This manual contains diagrams and descriptions of the components of the CYBER 960/962 power and environmental subsystem. The subsystem components are documented in separate diagrams. Power supplies and related items are documented in schematic diagrams. Control modules are documented in logic diagrams. Interconnections between components are documented in cabling diagrams.

DIVIDER TABS

Blue tabs divide the subsystem components by cabinet location (power unit, CPU, or IOU). A blue tab also precedes a subsystem overview. White tabs divide the diagrams and descriptions of subsystem components.

SYMBOLS USED IN LOGIC DIAGRAMS

The symbols used in logic diagrams are described in the Key to Logic Symbols Manual, listed in the preface.

CONVENTIONS USED IN CABLING DIAGRAMS

Figure 1 shows the conventions used in cabling diagrams.

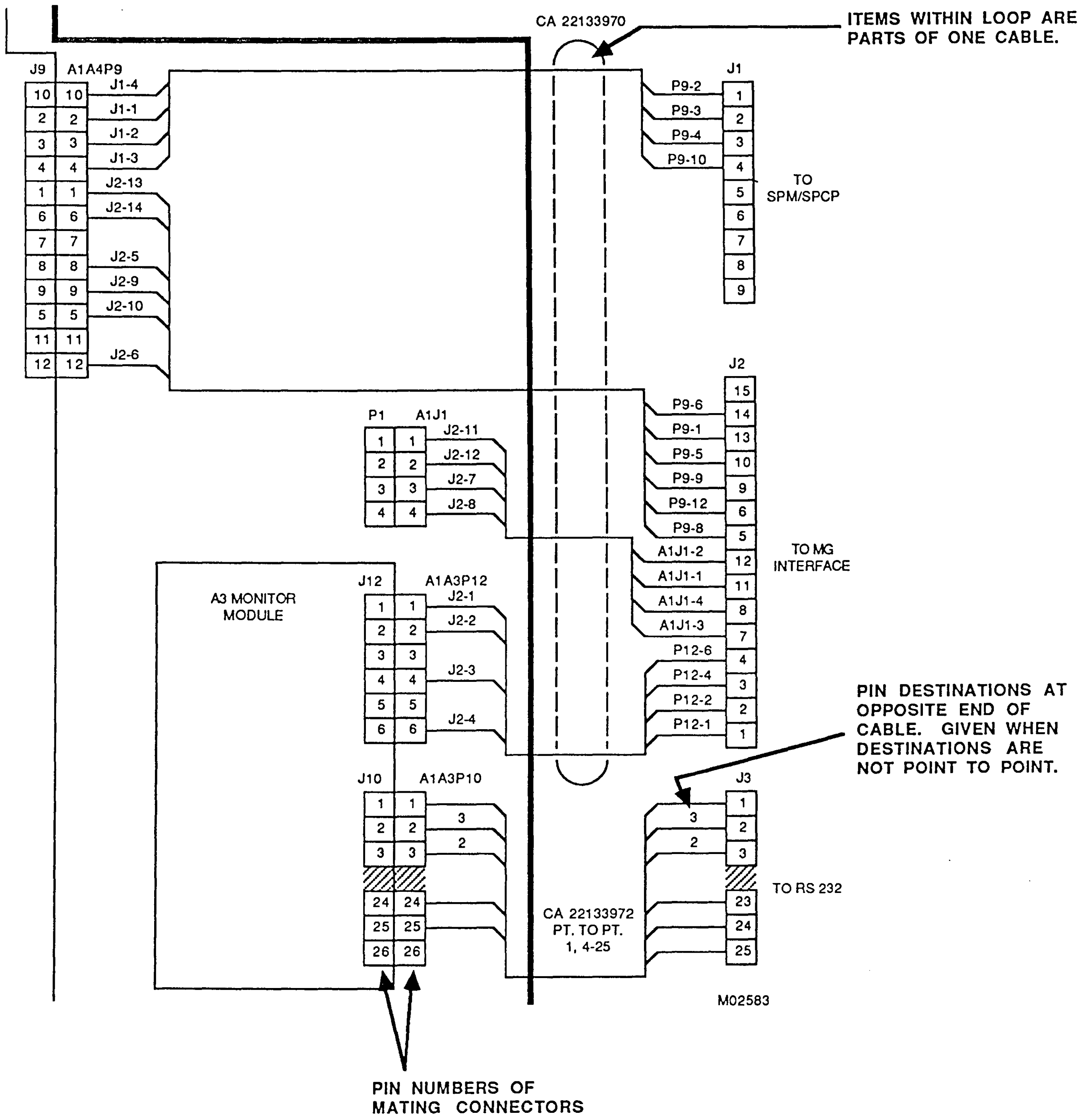

Figure 1. Conventions Used in Cabling Diagrams

SUBSYSTEM OVERVIEW

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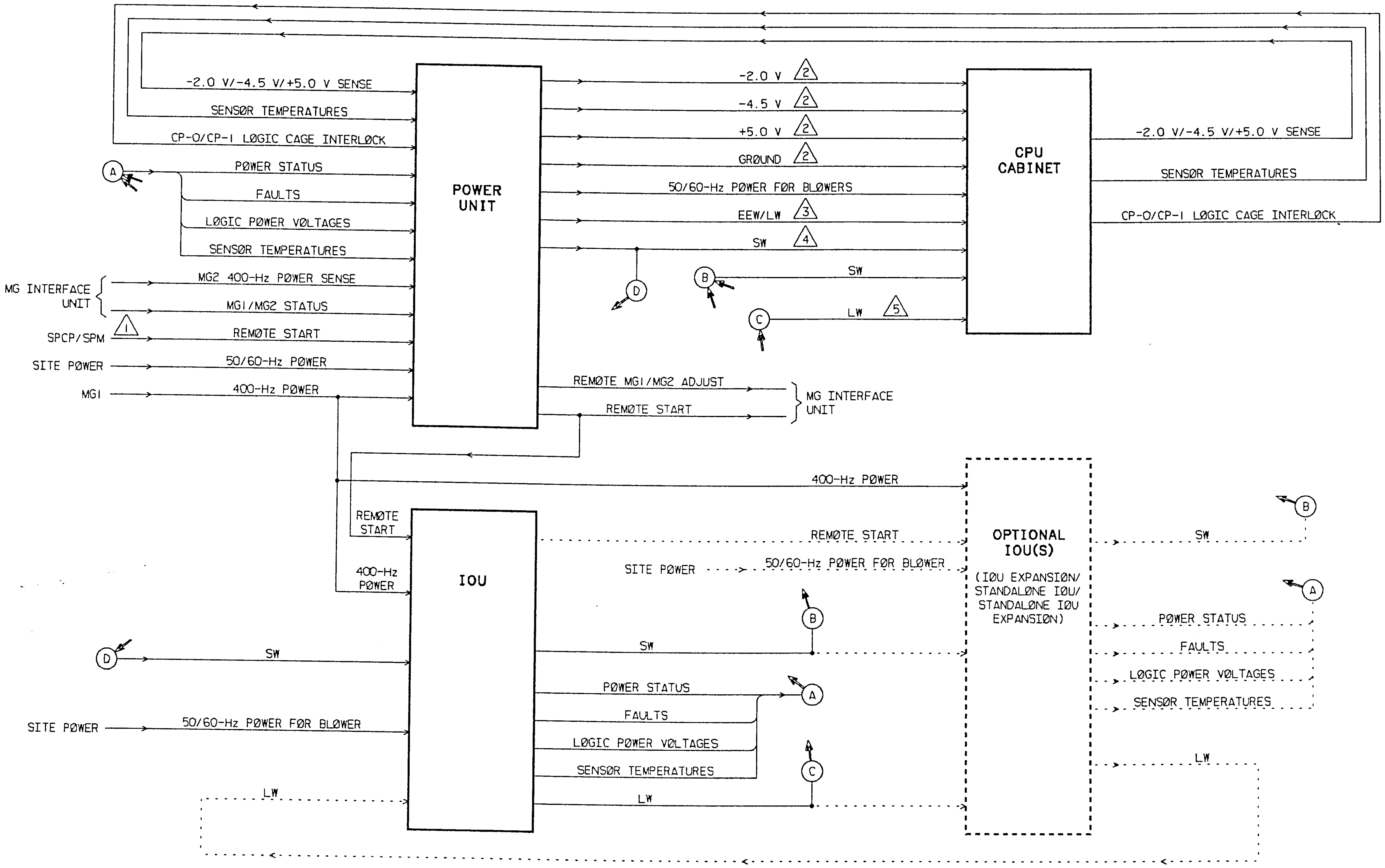

NOTES:

1 SYSTEM POWER CONTROL PANEL (SPCP) OR SYSTEM POWER MONITOR (SPM) OF ANOTHER SYSTEM IF POWER IS TO BE APPLIED IN REMOTE MODE.

2 BUS BARS.

3 EARLY ENVIRONMENTAL WARNING (EEW)/LONG WARNING (LW).

4 SHORT WARNING (SW).

5 LONG WARNING (LW) ACTUALLY SENT VIA DATA LINES.

CONTROL DATA DEVELOPMENT DIVISION	POWER/ENVIRONMENTAL SUBSYSTEM BLOCK DIAGRAM	CODE IDENT C	DWG NO 60000121 SHEET PWR SUBSYS BD	REV A PAGE

POWER UNIT CABLING

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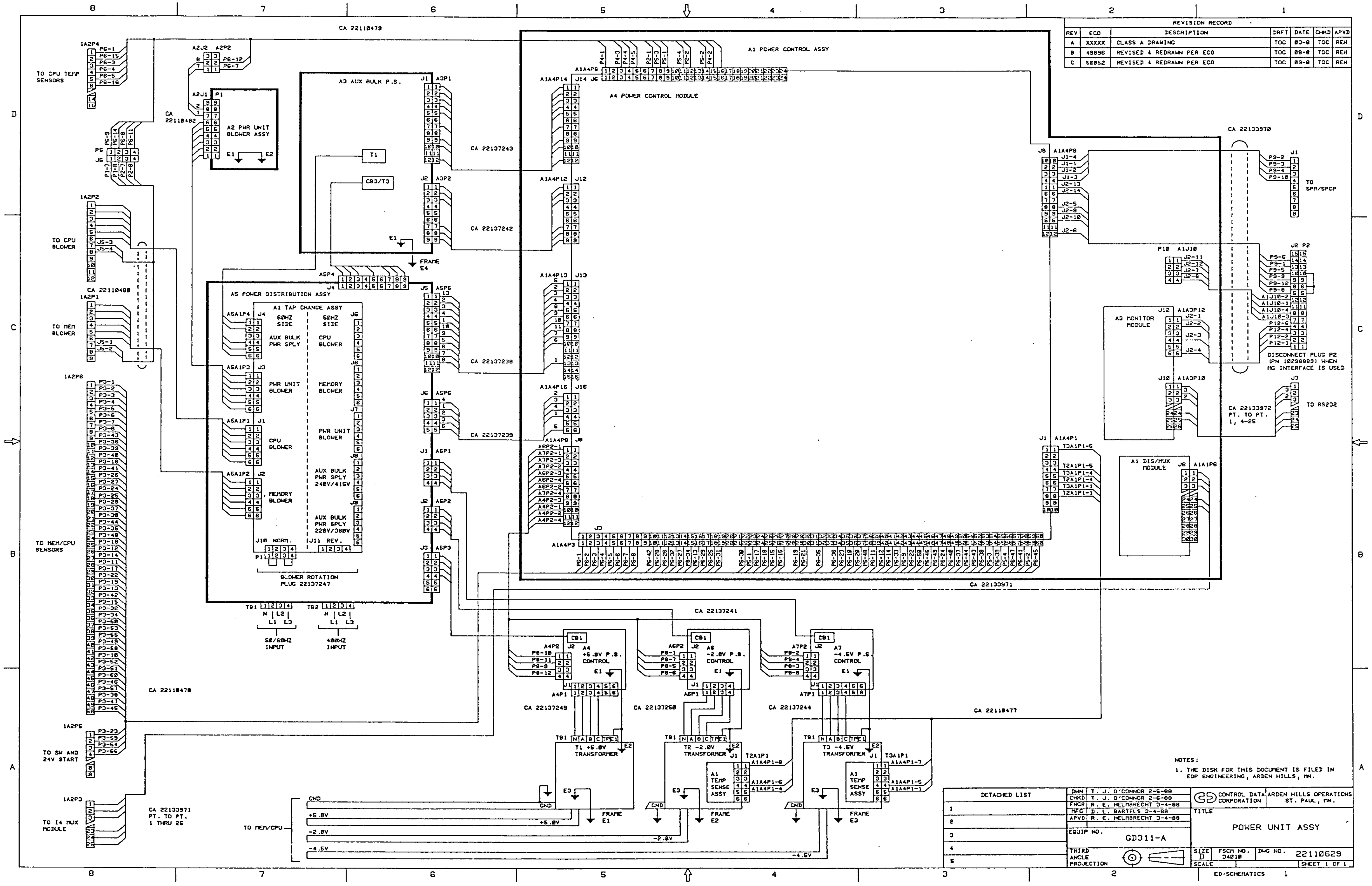

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TITLE
POWER UNIT ASSY

EQUIP NO. GD311-A

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SCALE | SHEET 1 OF 1

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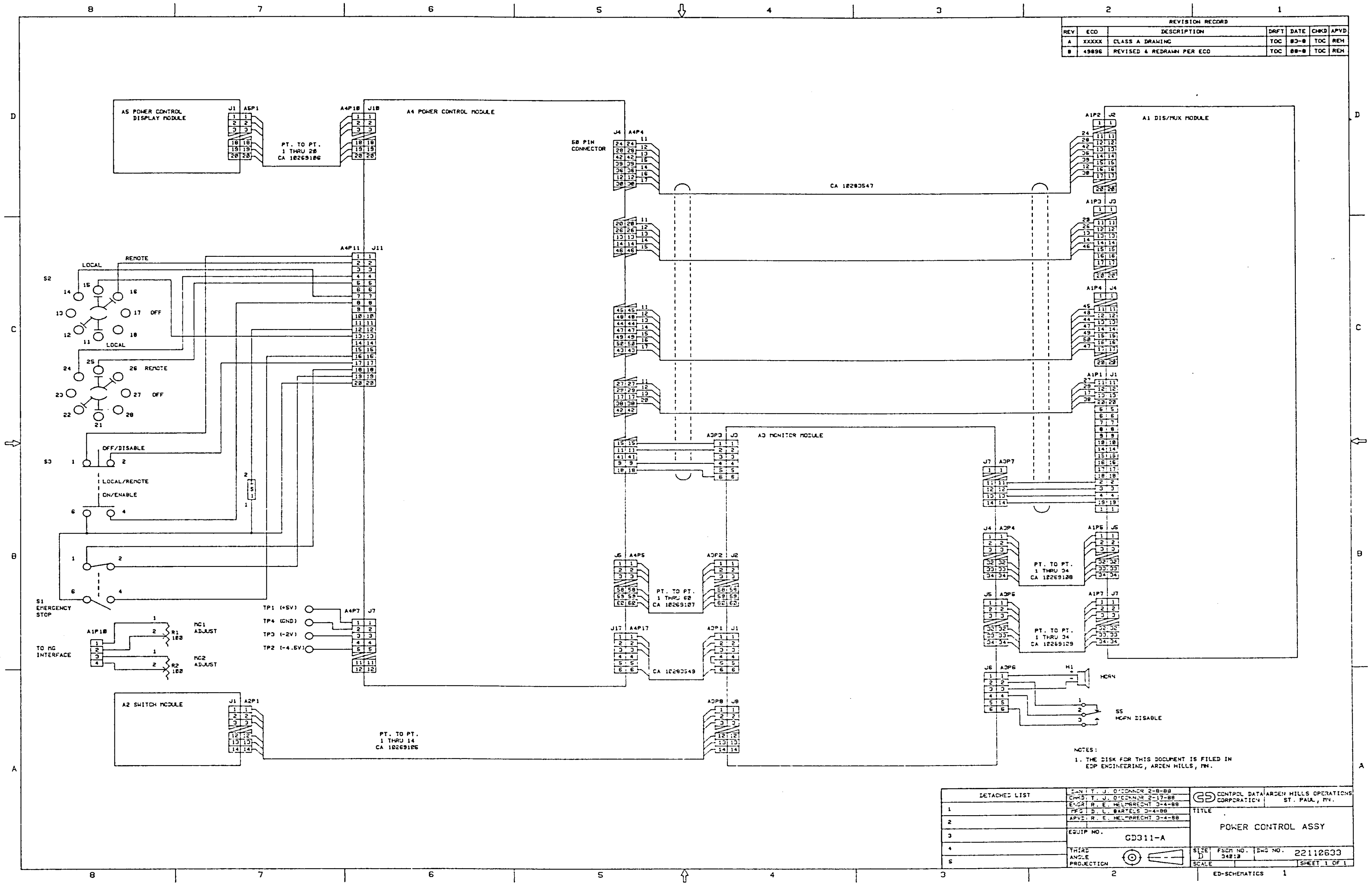

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POWER DISTRIBUTION BOX

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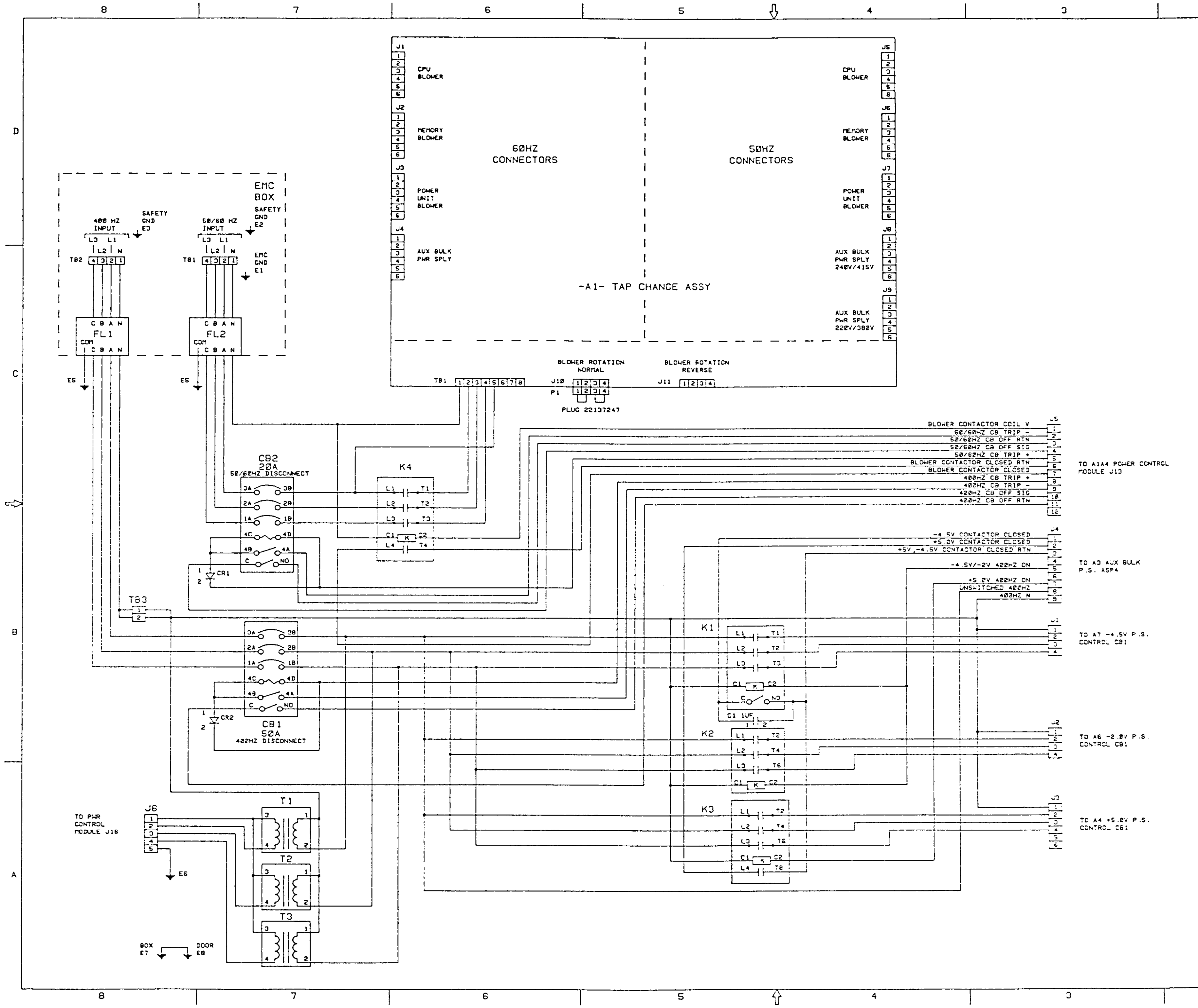

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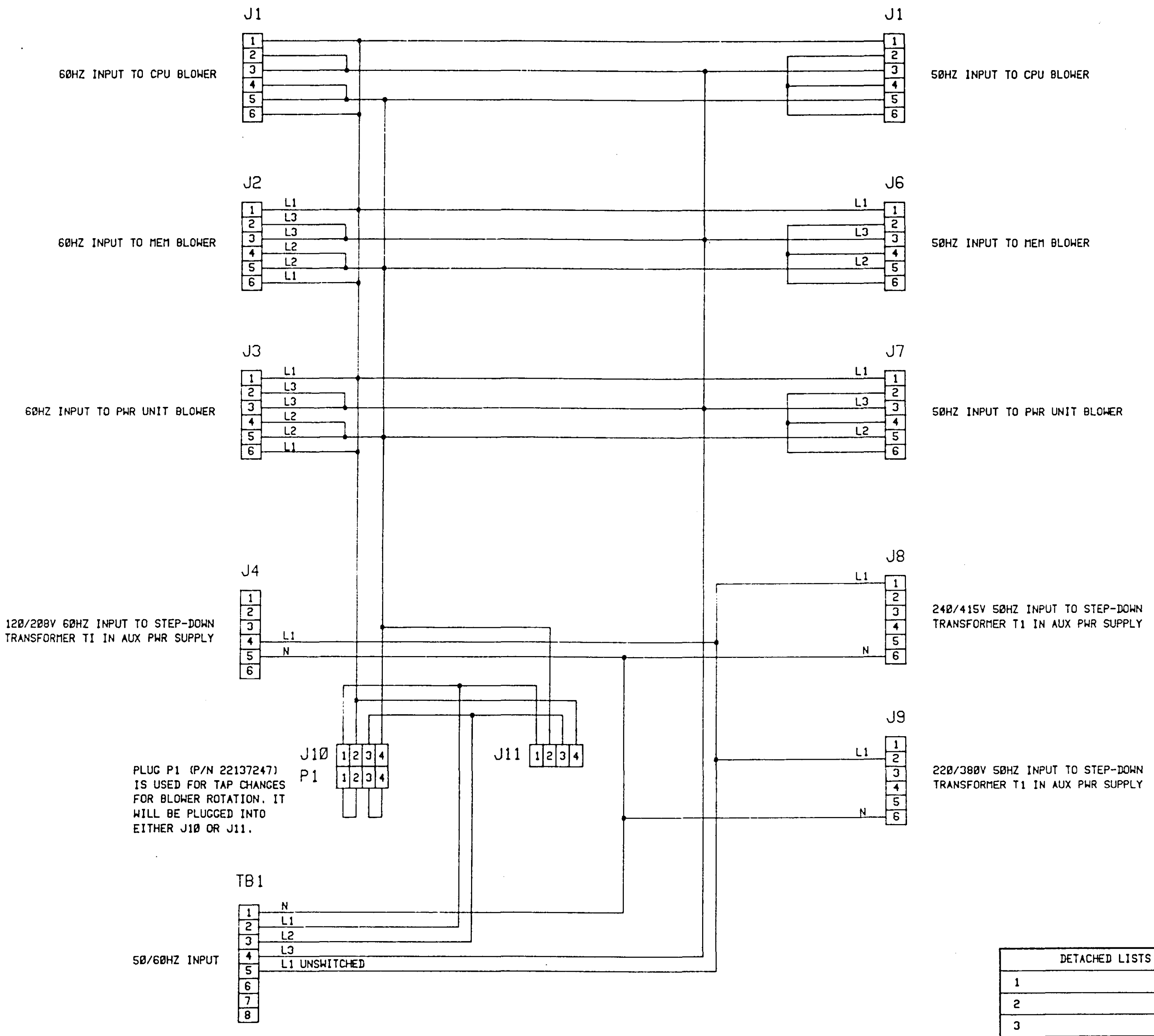
J1
60HZ INPUT TO CPU BLOWER
J1
50HZ INPUT TO CPU BLOWER
J2
60HZ INPUT TO MEM BLOWER
L1
L3
L3
L2
L2
L1
J6
50HZ INPUT TO MEM BLOWER
L1
L3
L2
J3
60HZ INPUT TO PWR UNIT BLOWER
L1
L3
L3
L2
L2
L1
J7
50HZ INPUT TO PWR UNIT BLOWER
L1
L3
L2
J4
120/208V 60HZ INPUT TO STEP-DOWN TRANSFORMER TI IN AUX PWR SUPPLY
L1
N
J8
240/415V 50HZ INPUT TO STEP-DOWN TRANSFORMER T1 IN AUX PWR SUPPLY
L1
N
J9
220/380V 50HZ INPUT TO STEP-DOWN TRANSFORMER T1 IN AUX PWR SUPPLY
L1
N
J10
P1
J11
PLUG P1 (P/N 22137247) IS USED FOR TAP CHANGES FOR BLOWER ROTATION. IT WILL BE PLUGGED INTO EITHER J10 OR J11.
TB1
50/60HZ INPUT
N
L1
L2
L3
L1 UNSWITCHED

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MFG	NAME/DATE	2/18/88
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TITLE
TAP-CHANGE
SCHEMATIC

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AUXILIARY BULK POWER SUPPLY

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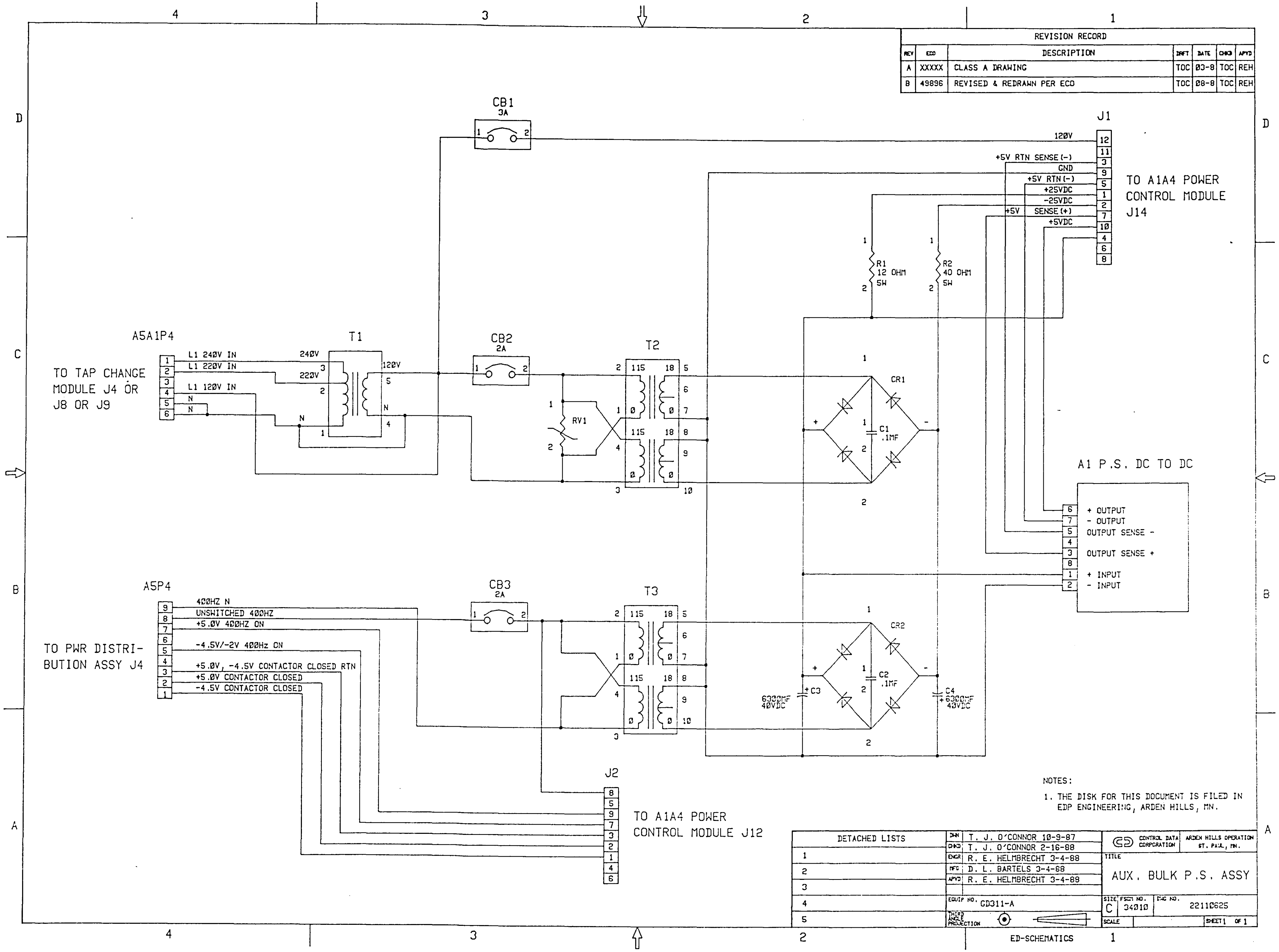

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4	MFG	D. L. BARTELS 3-4-88		
5	APVD	R. E. HELMBRECHT 3-4-88		
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ED-SCHEMATICS

-2.0-V POWER SUPPLY

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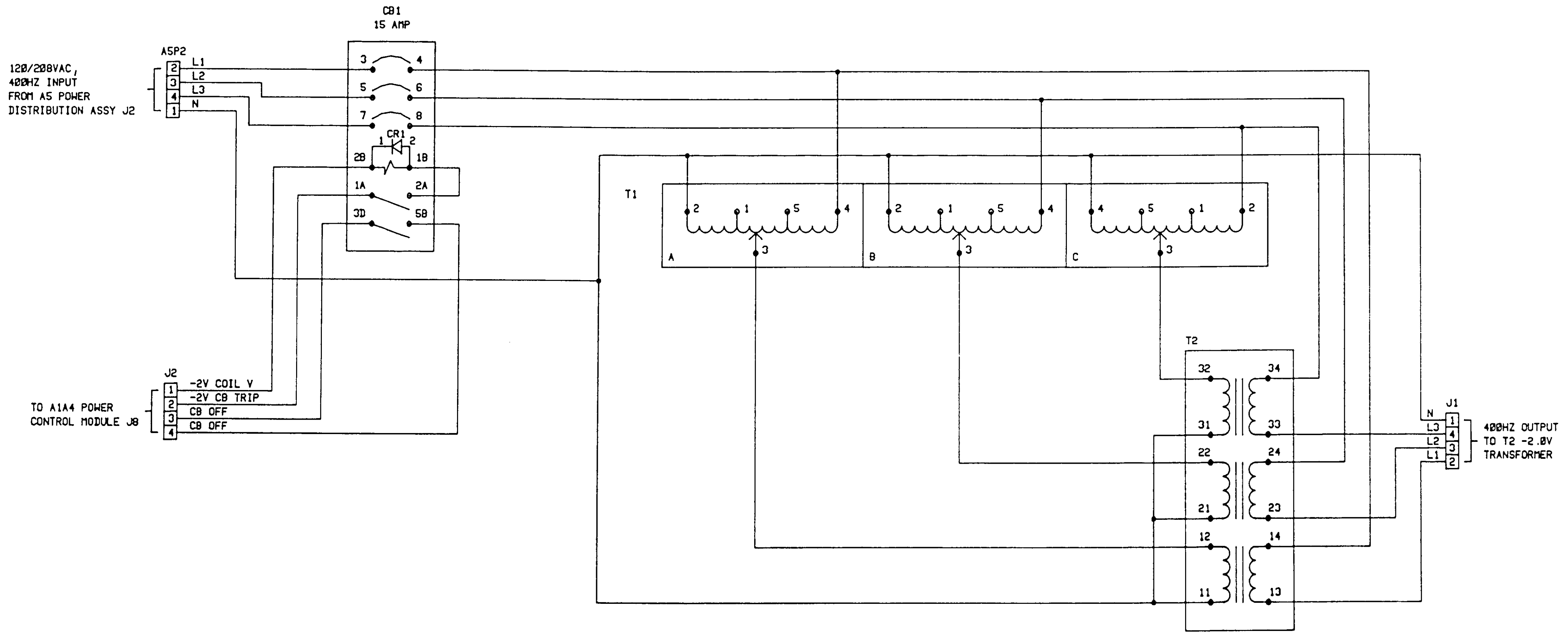

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EQUIP NO. GD311-A
THIRD ANGLE PROJECTION

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TITLE
-2.0 VOLT POWER
SUPPLY CONTROL

SIZE C
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DWG NO. 22110626
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-4.5-V POWER SUPPLY

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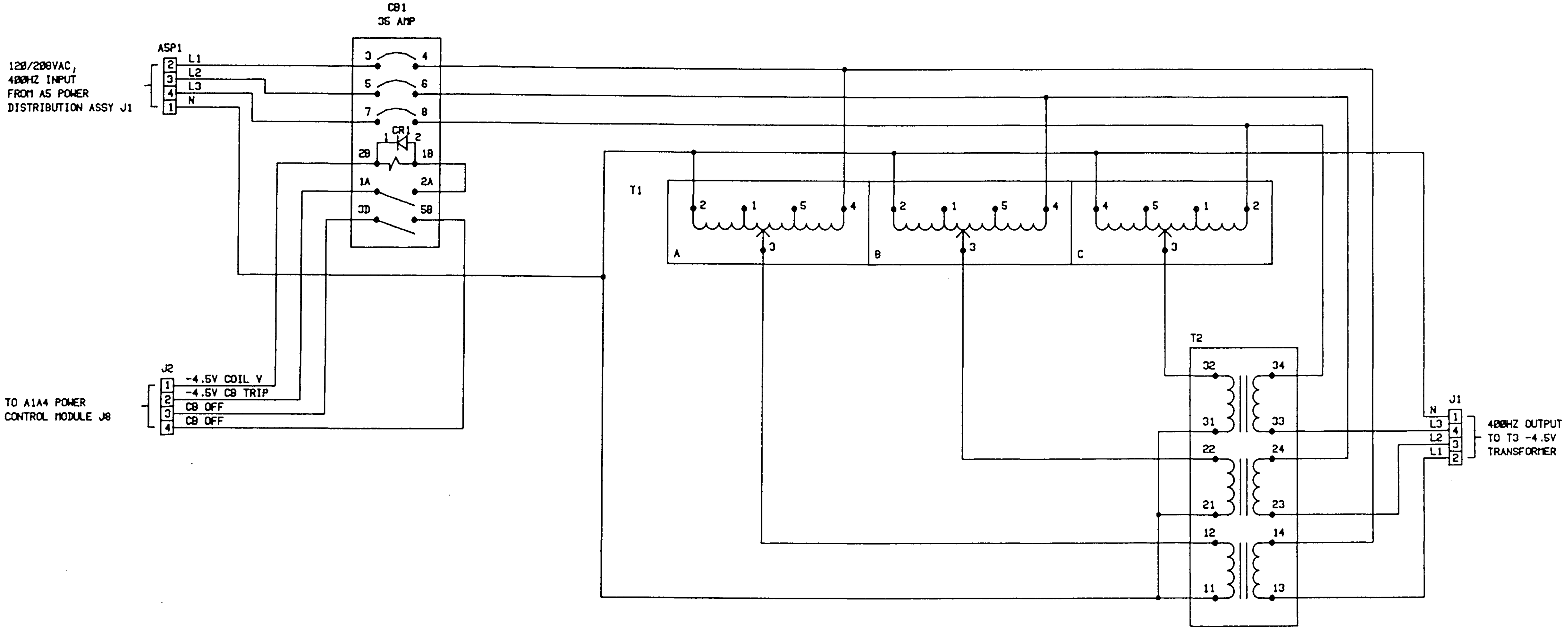

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APVD R. E. HELMBRECHT 3-4-88

EQUIP NO. GD311-A
THIRD ANGLE PROJECTION

CONTROL DATA CORPORATION
ARDEN HILLS OPERATION ST. PAUL, MN.

TITLE
-4.5 VOLT POWER
SUPPLY CONTROL

SIZE C FSCM NO. 34010 DWG NO. 22110624
SCALE SHEET 1 OF 1

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+5.0-V POWER SUPPLY

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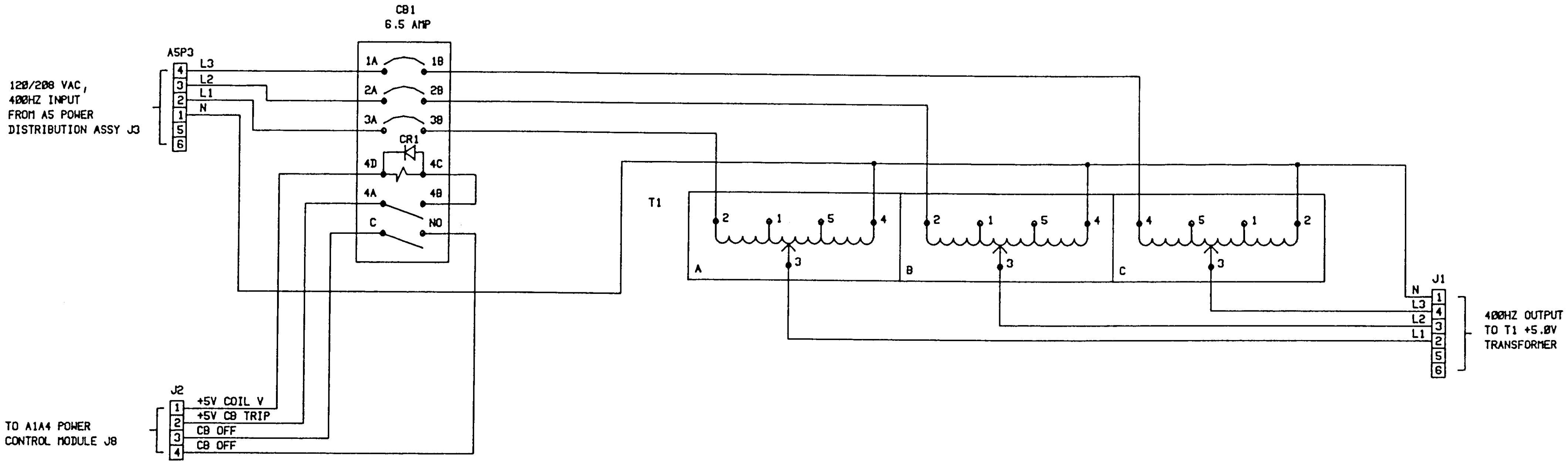

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EQUIP NO. GD311-A

THIRD ANGLE PROJECTION

CONTROL DATA CORPORATION

ARDEN HILLS OPERATION
ST. PAUL, MN.

TITLE
+5.0 VOLT POWER
SUPPLY CONTROL

SIZE	FSCM NO.	DWG NO.
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SCALE

SHEET 1 OF 1

ED-SCHEMATICS

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A	-----	CLASS A RELEASE	LPJ	02-8	LPJ	BEH
B	49714	SEE ECO	LPJ	07-8	LPJ	BEH
C	49972	CAP AND RES VALUE CHANGES, ADDED FOIL	LPJ	09-8	LPJ	BEH
D	50008	ADD RESISTOR	LPJ	09-8	LPJ	BEH

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THIRD ANGLE PROJECTION	

CONTROL DATA CORPORATION
ARDEN HILLS OPERATIONS
ST. PAUL, MN.

TITLE

POWER CONTROL BOARD
SCHEMATIC

SIZE	FSCM NO.	DWG NO.
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SCALE		SHEET 1 OF 6

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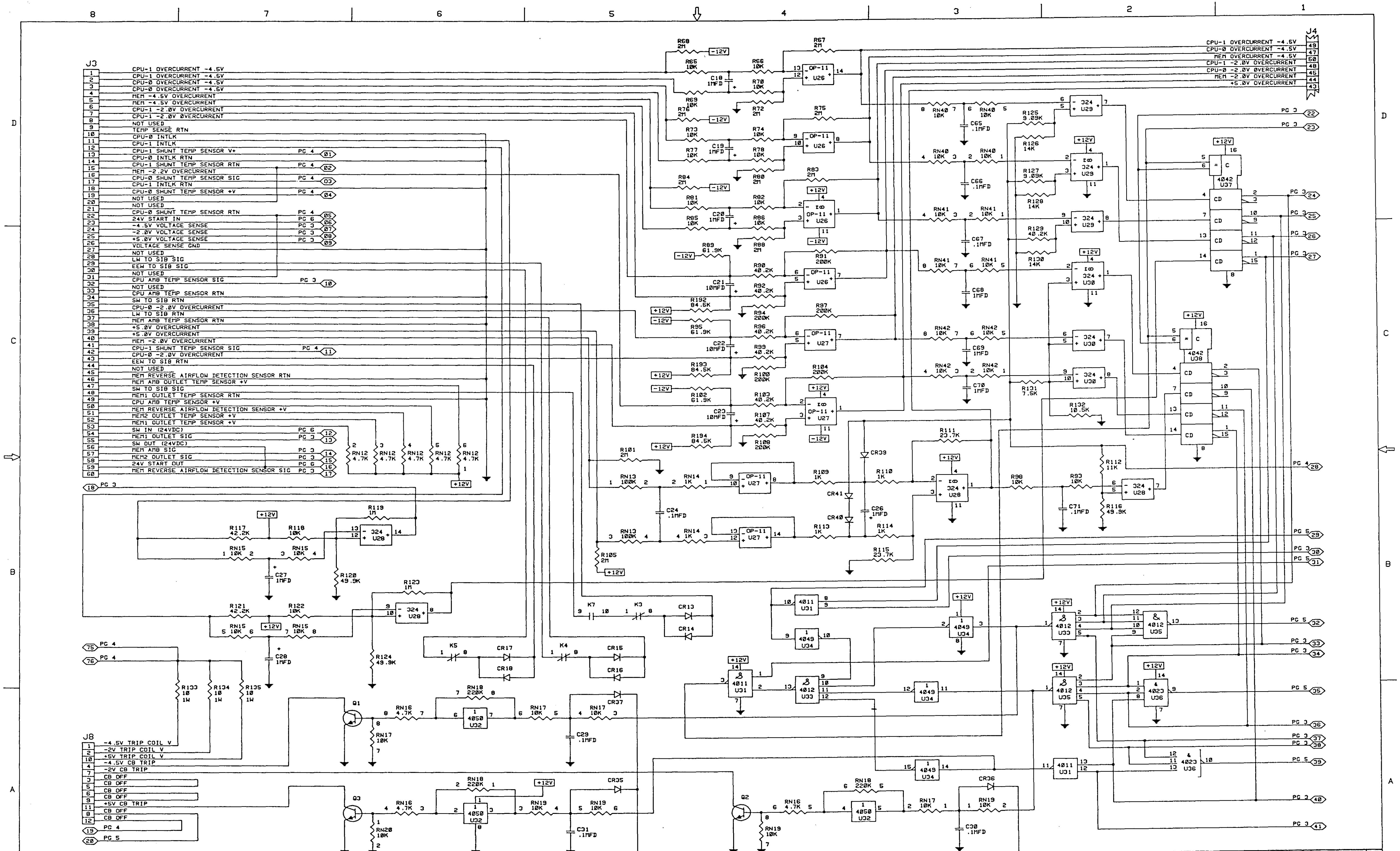

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ARDEN HILLS OPERATION

PWR CONTROL BD SCHEMATIC

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SHEET 2 OF 6

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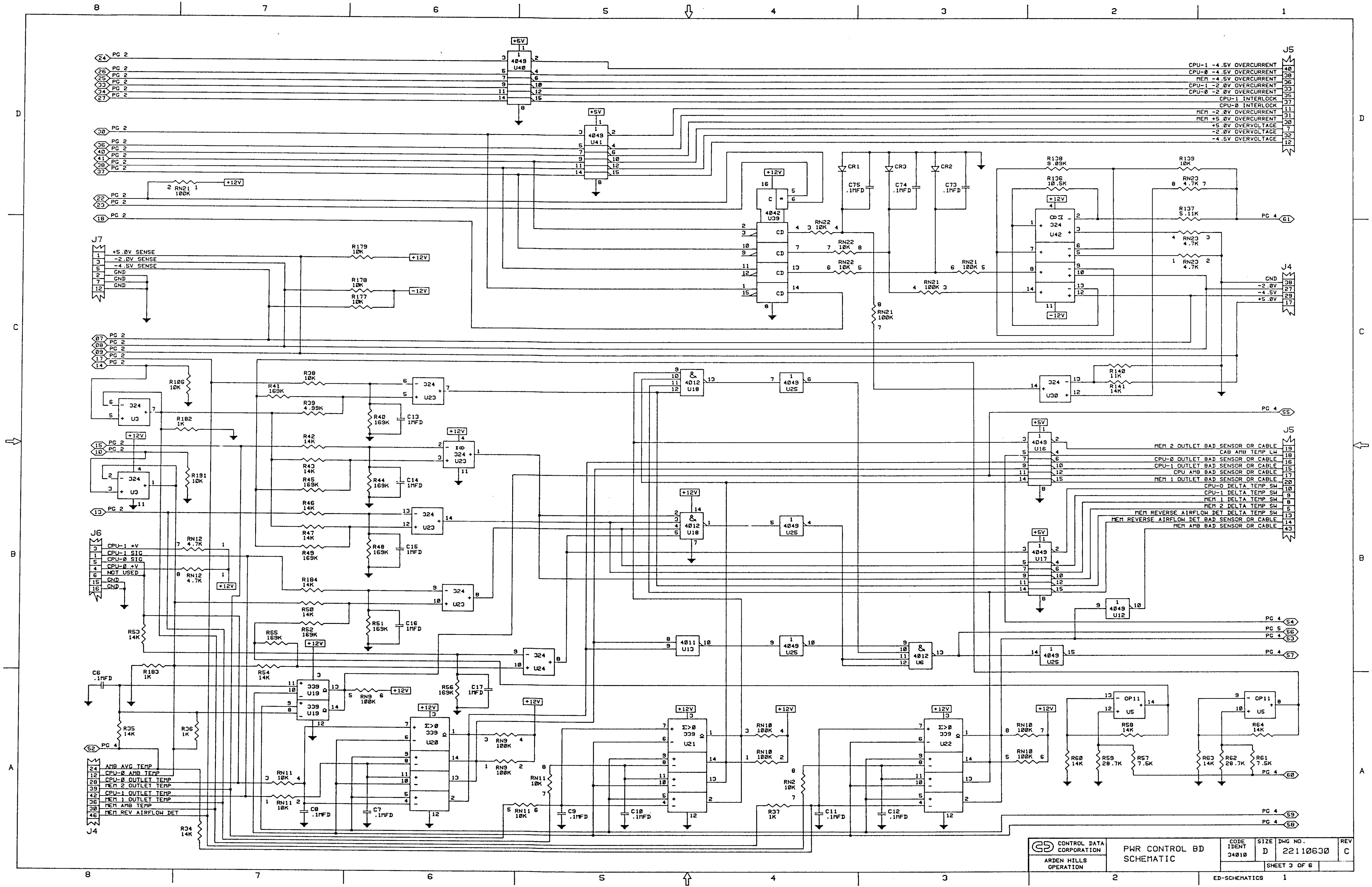

CONTROL DATA CORPORATION

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		SHEET 3 OF 6	

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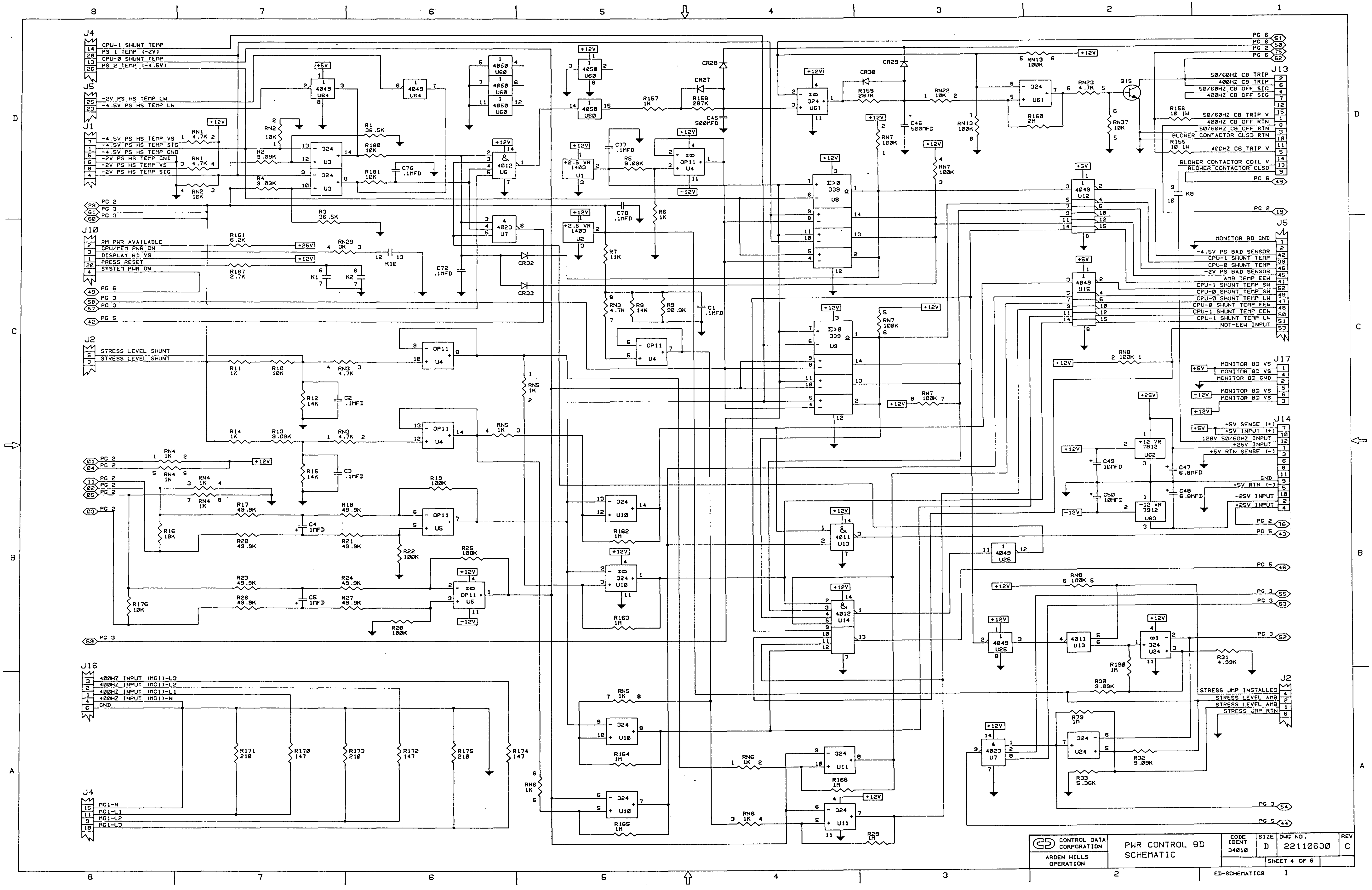

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ARDEN HILLS OPERATION

PWR CONTROL BD SCHEMATIC

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SHEET 4 OF 6

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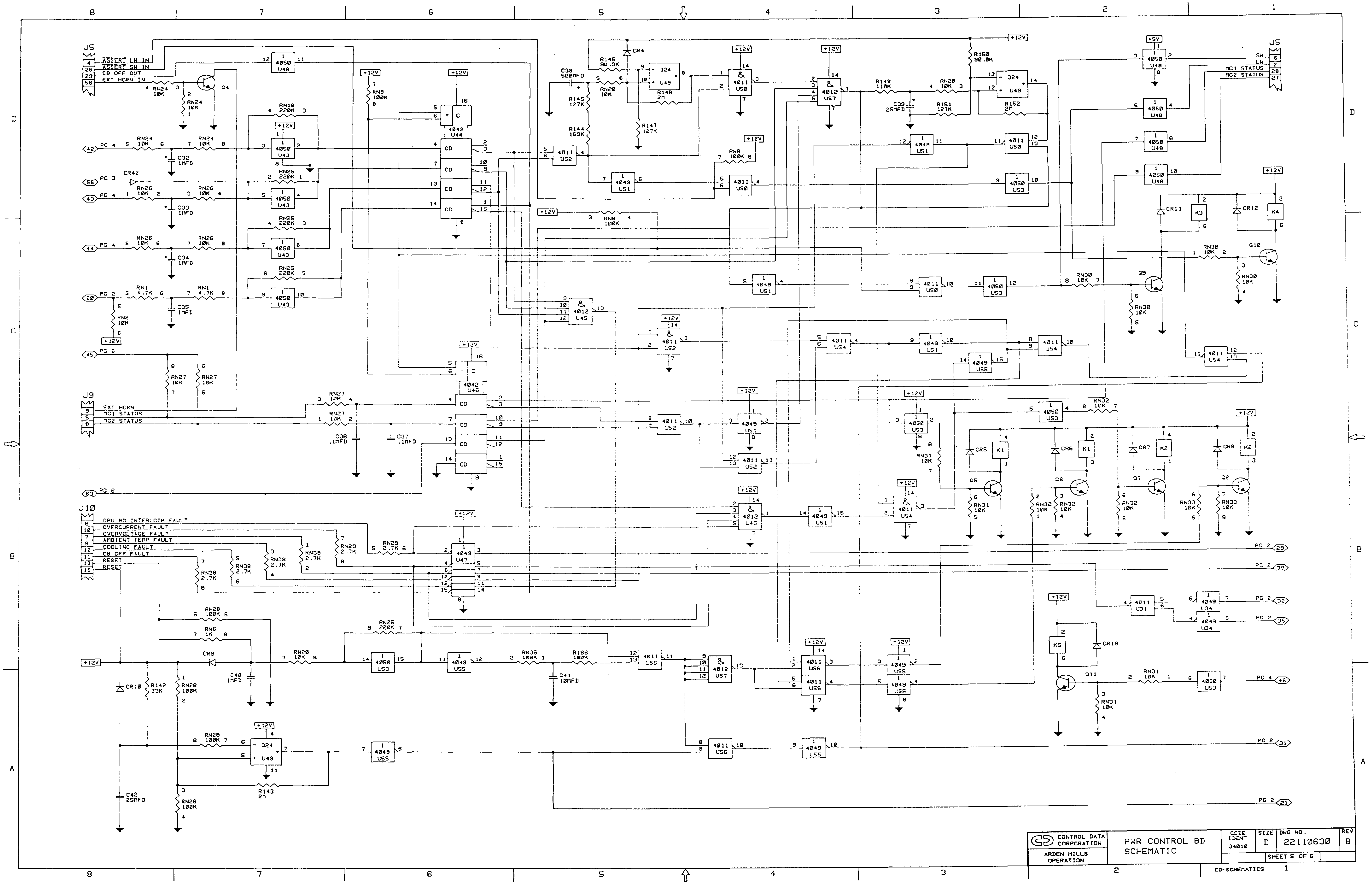

CONTROL DATA CORPORATION

ARDEN HILLS OPERATION

PWR CONTROL BD SCHEMATIC

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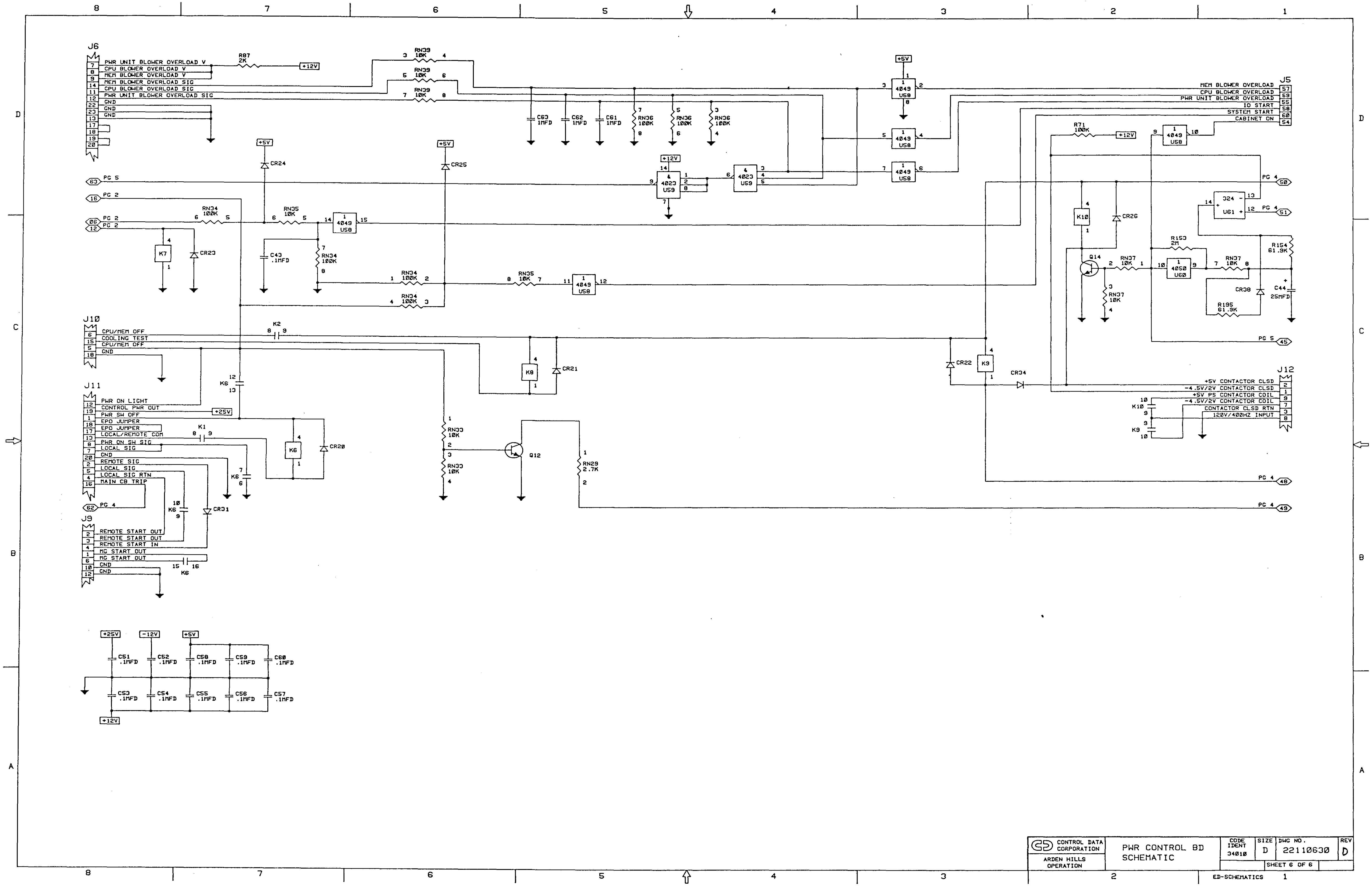
SHEET 5 OF 6

ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



CONTROL DATA CORPORATION
ARDEN HILLS OPERATION

PWR CONTROL BD SCHEMATIC

CODE IDENT	SIZE	DWG NO.	REV
34010	D	22110630	D

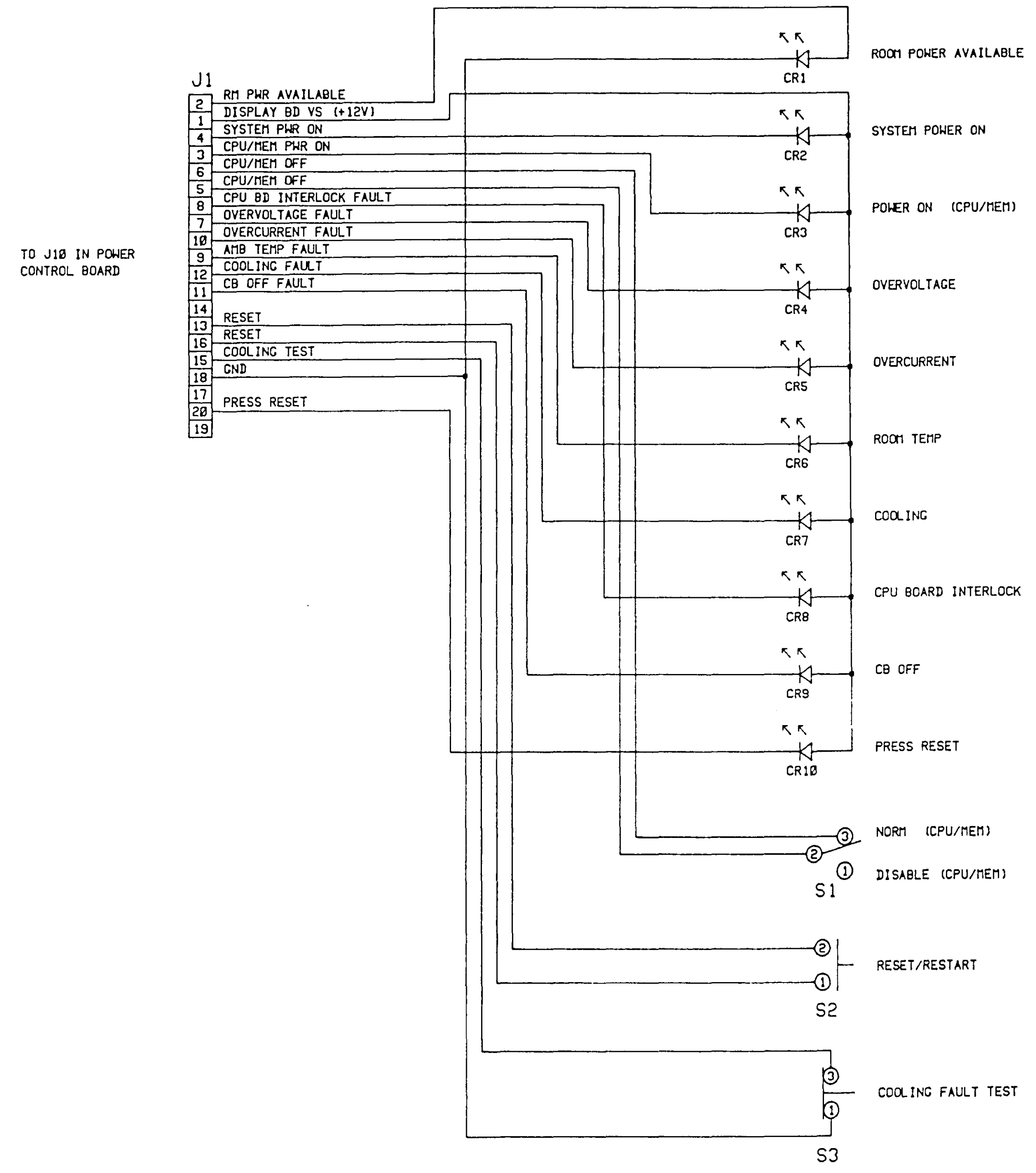
SHEET 6 OF 6

ED-SCHEMATICS

POWER CONTROL DISPLAY MODULE

Description for the following diagram will be included in a later revision.

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A		CLASS A DRAWING	LPJ	09-7		RK



NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LISTS
1
2
3
4
5

DWN	LARRY JONES	6-01-87
CHKD	LARRY JONES	6-15-87
ENGR		11/12/87
MFG		10-9-87
APVD		10/87

EQUIP NO. GD311A

THIRD ANGLE PROJECTION

CONTROL DATA CORPORATION

ARDEN HILLS OPERATION
ST. PAUL, MN.

TITLE
POWER DISPLAY
SCHEMATIC

SIZE	FSCM NO.	DWG NO.
C	34010	22110631

SCALE SHEET 1 OF 1

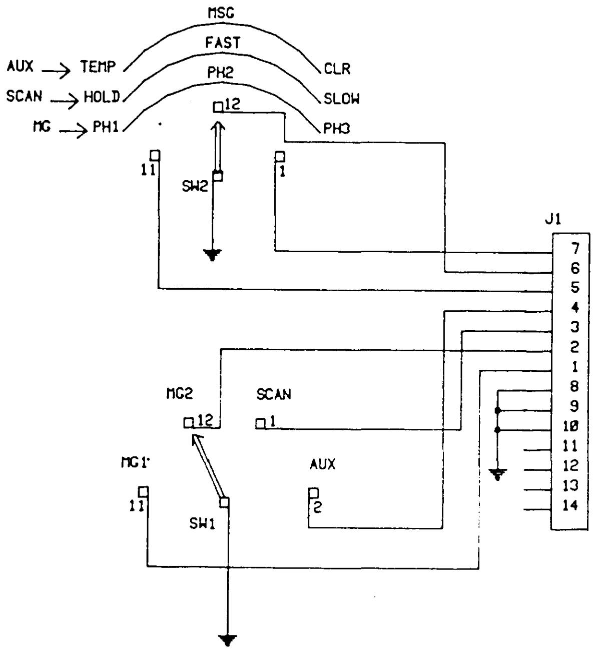
ED-SCHEMATICS

SWITCH MODULE

Description for the following diagram will be included in a later revision.

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	XXXXX	CLASS A DRAWING	CHN	02-8	CHN	JCU



DETACHED LISTS		
1	DRN	CHI H. NGUYEN 2-12-88
2	CHKD	CHI H. NGUYEN 2-12-88
3	ENGR	JUAN C. URBI 2-12-88 JCU
4	MFG	DAN L. BARTELS 2-12-88
5	APVD	JUAN C. URBI 2-12-88 JCU

EQUIP NO. GD311-A

THIRD ANGLE PROJECTION

CONTROL DATA CORPORATION
ARDEN HILLS OPERATION
ST. PAUL, MN.

TITLE
SWITCH MODULE

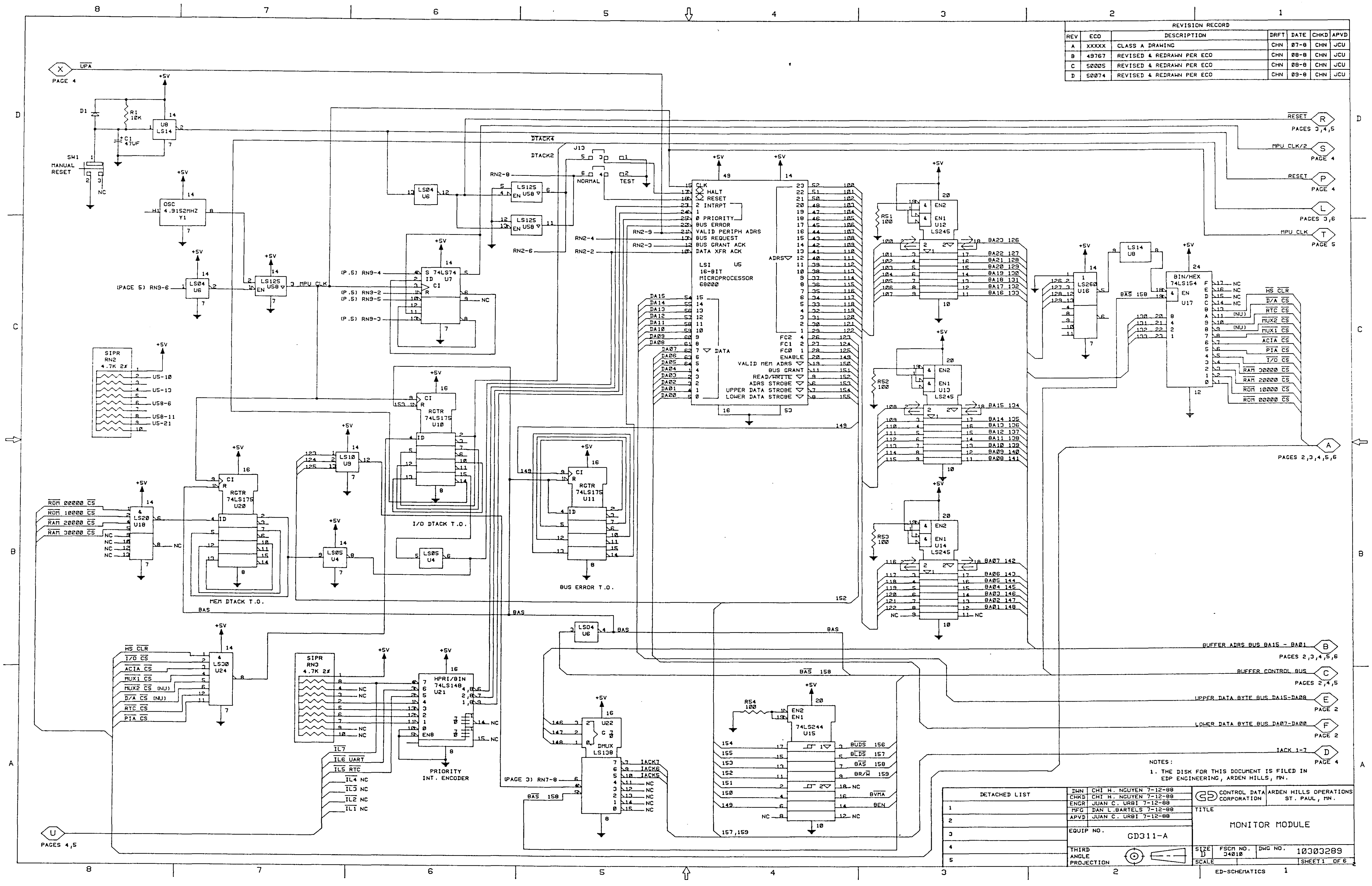
SIZE	FSCM NO.	DWG NO.
C	34010	22110632

SCALE   SHEET 1 OF 1

ED-SCHEMATICS

MONITOR MODULE

Description for the following diagram will be included in a later revision.



REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	XXXXX	CLASS A DRAWING	CHN	07-8	CHN	JCU
B	49767	REVISED & REDRAWN PER ECO	CHN	08-8	CHN	JCU
C	50005	REVISED & REDRAWN PER ECO	CHN	08-8	CHN	JCU
D	50074	REVISED & REDRAWN PER ECO	CHN	09-8	CHN	JCU

NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LIST		
1	DWN	CHI H. NGUYEN 7-12-88
2	CHKD	CHI H. NGUYEN 7-12-88
3	ENGR	JUAN C. URBI 7-12-88
4	MFG	DAN L.BARTELS 7-12-88
5	APVD	JUAN C. URBI 7-12-88

EQUIP NO. GD311-A

THIRD ANGLE PROJECTION

CONTROL DATA CORPORATION
ARDEN HILLS OPERATIONS
ST. PAUL, MN.

TITLE

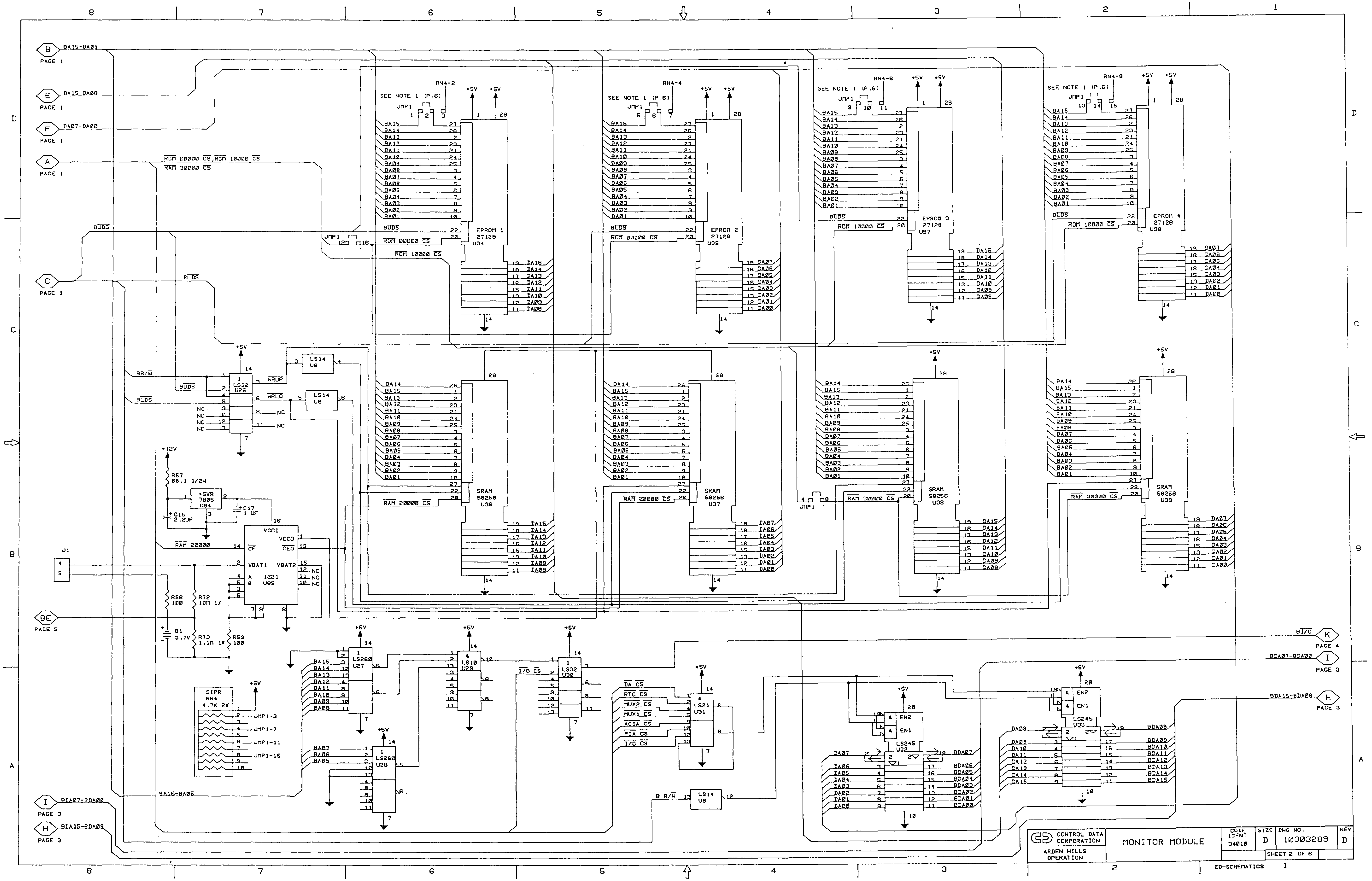
MONITOR MODULE

SIZE D | FSCM NO. 34010 | DWG NO. 10303289

SCALE | SHEET 1 OF 6

ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



CONTROL DATA CORPORATION

ARDEN HILLS OPERATION

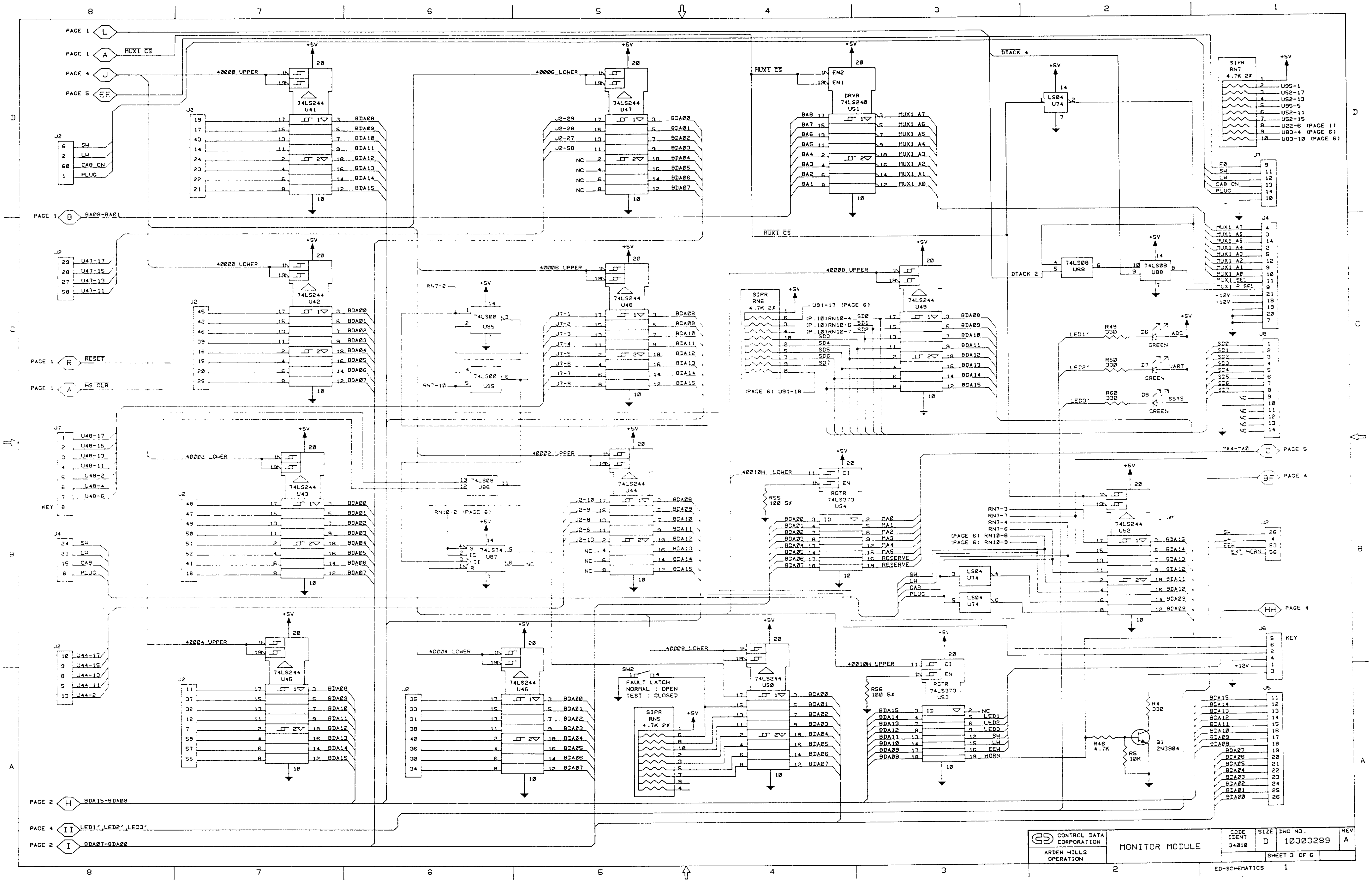
MONITOR MODULE

CODE IDENT	SIZE	DWG NO.	REV
34010	D	10303289	D

SHEET 2 OF 6

ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



CONTROL DATA CORPORATION

ARDEN HILLS OPERATION

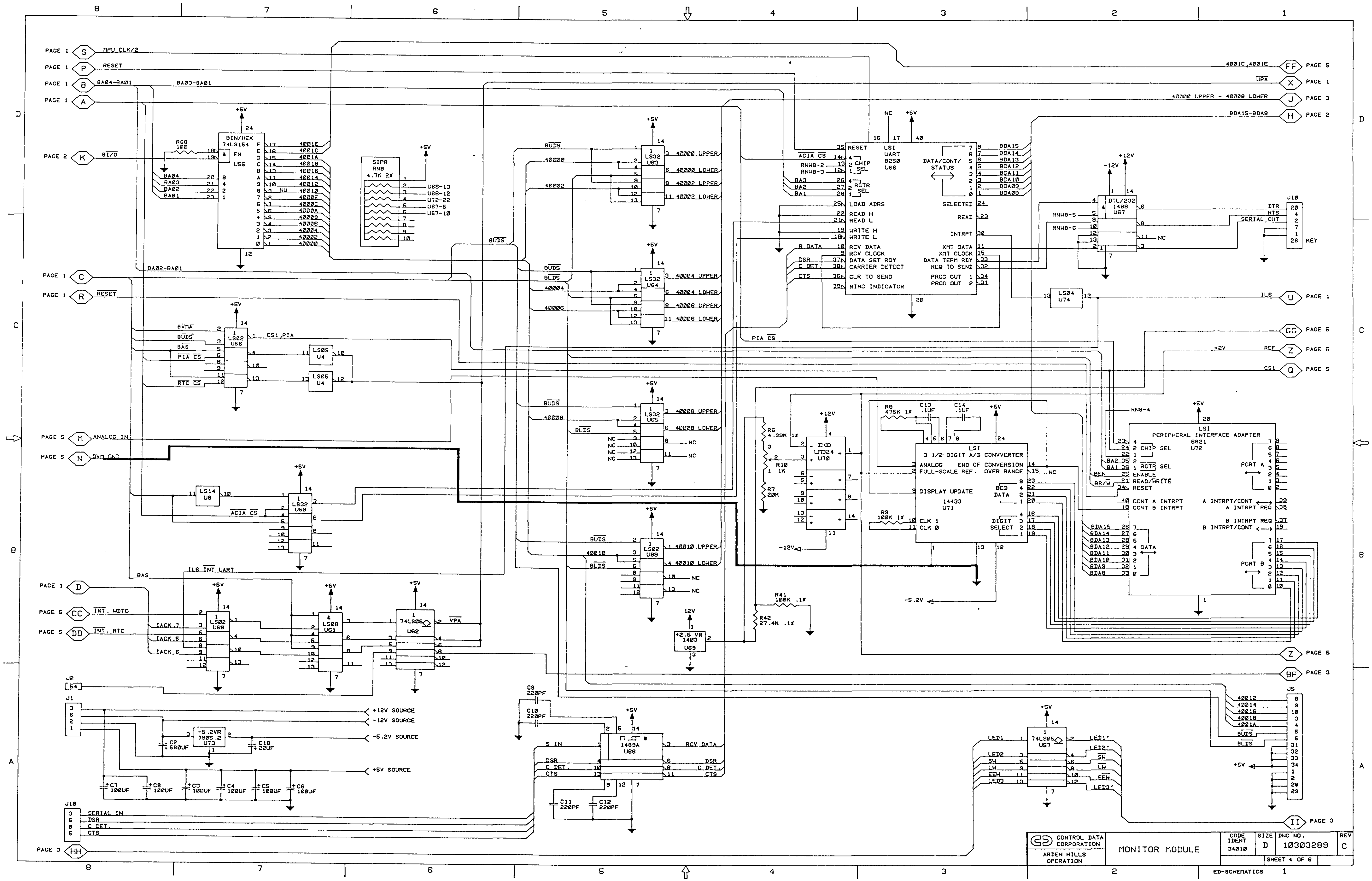
MONITOR MODULE

CODE IDENT	SIZE	DWG NO.	REV
34010	D	10303289	A

SHEET 3 OF 6

ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



CONTROL DATA CORPORATION

ARDEN HILLS OPERATION

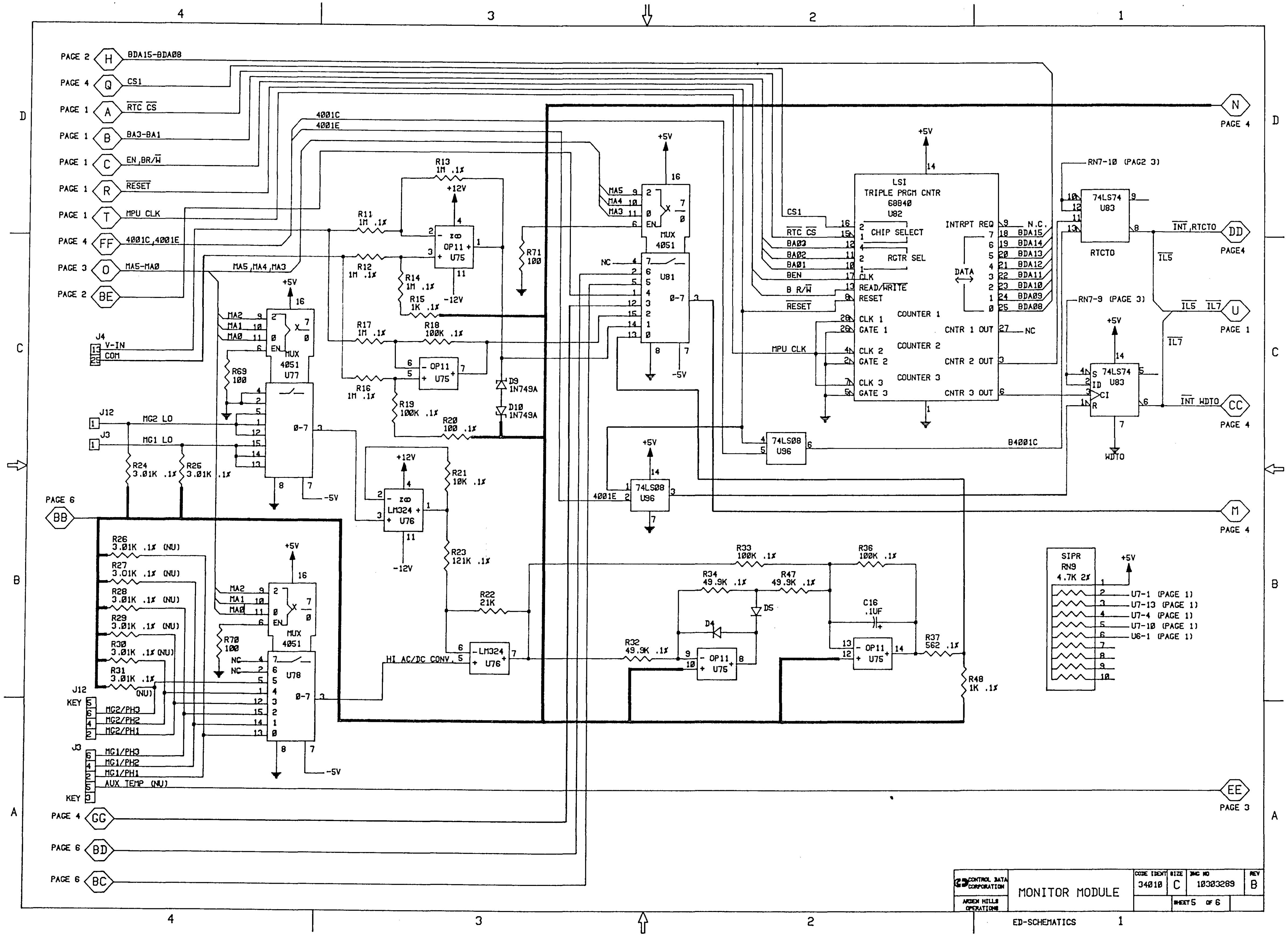
MONITOR MODULE

CODE IDENT 34010 | SIZE D | DWG NO. 10303289 | REV C

SHEET 4 OF 6

ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



CONTROL DATA CORPORATION
ARDEN HILLS OPERATIONS

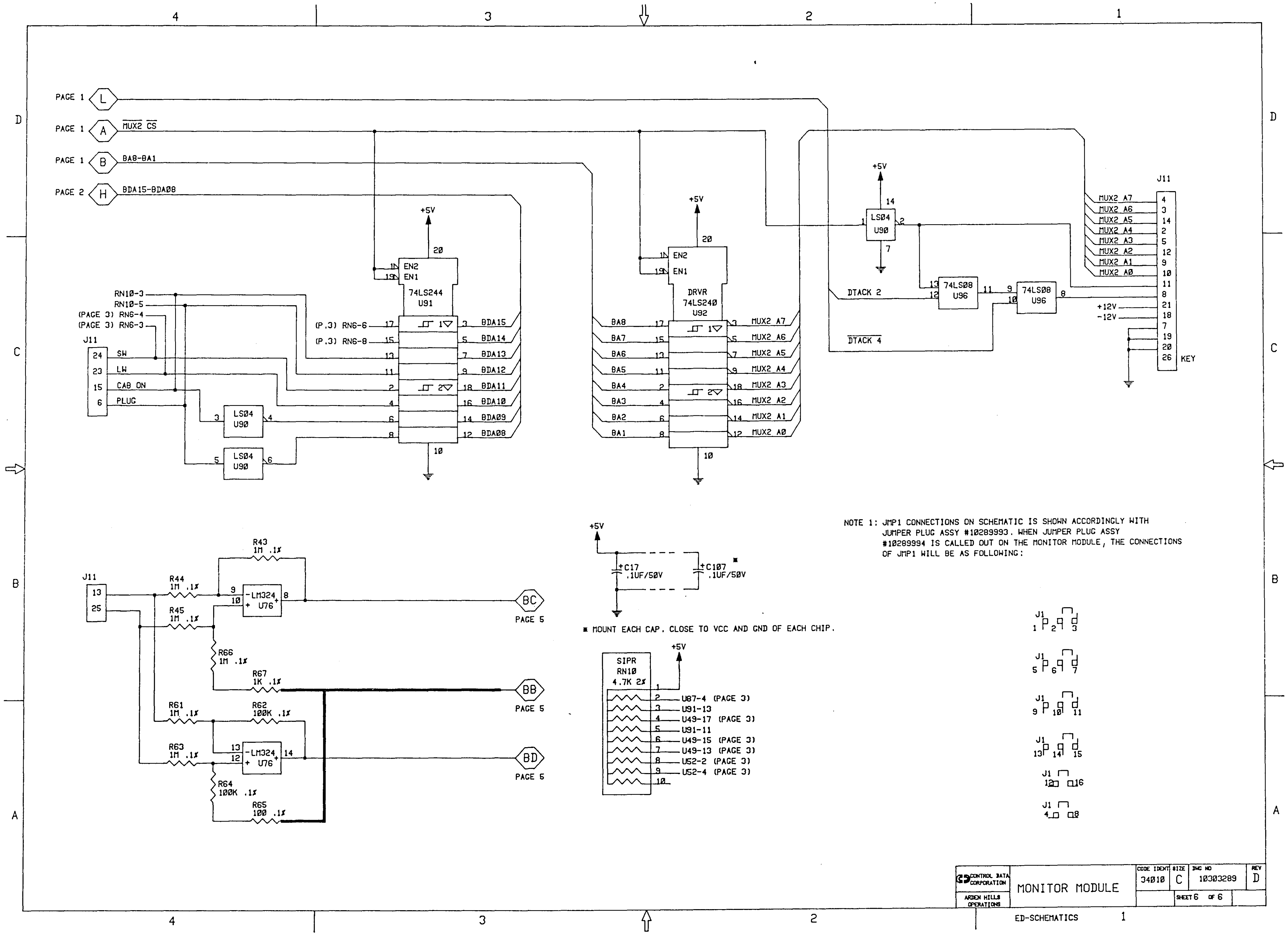
MONITOR MODULE

CODE IDENT	SIZE	DWG NO	REV
34010	C	10303289	B

SHEET 5 OF 6

ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



* MOUNT EACH CAP. CLOSE TO VCC AND GND OF EACH CHIP.

NOTE 1: JMP1 CONNECTIONS ON SCHEMATIC IS SHOWN ACCORDINGLY WITH JUMPER PLUG ASSY #10289993. WHEN JUMPER PLUG ASSY #10289994 IS CALLED OUT ON THE MONITOR MODULE, THE CONNECTIONS OF JMP1 WILL BE AS FOLLOWING:

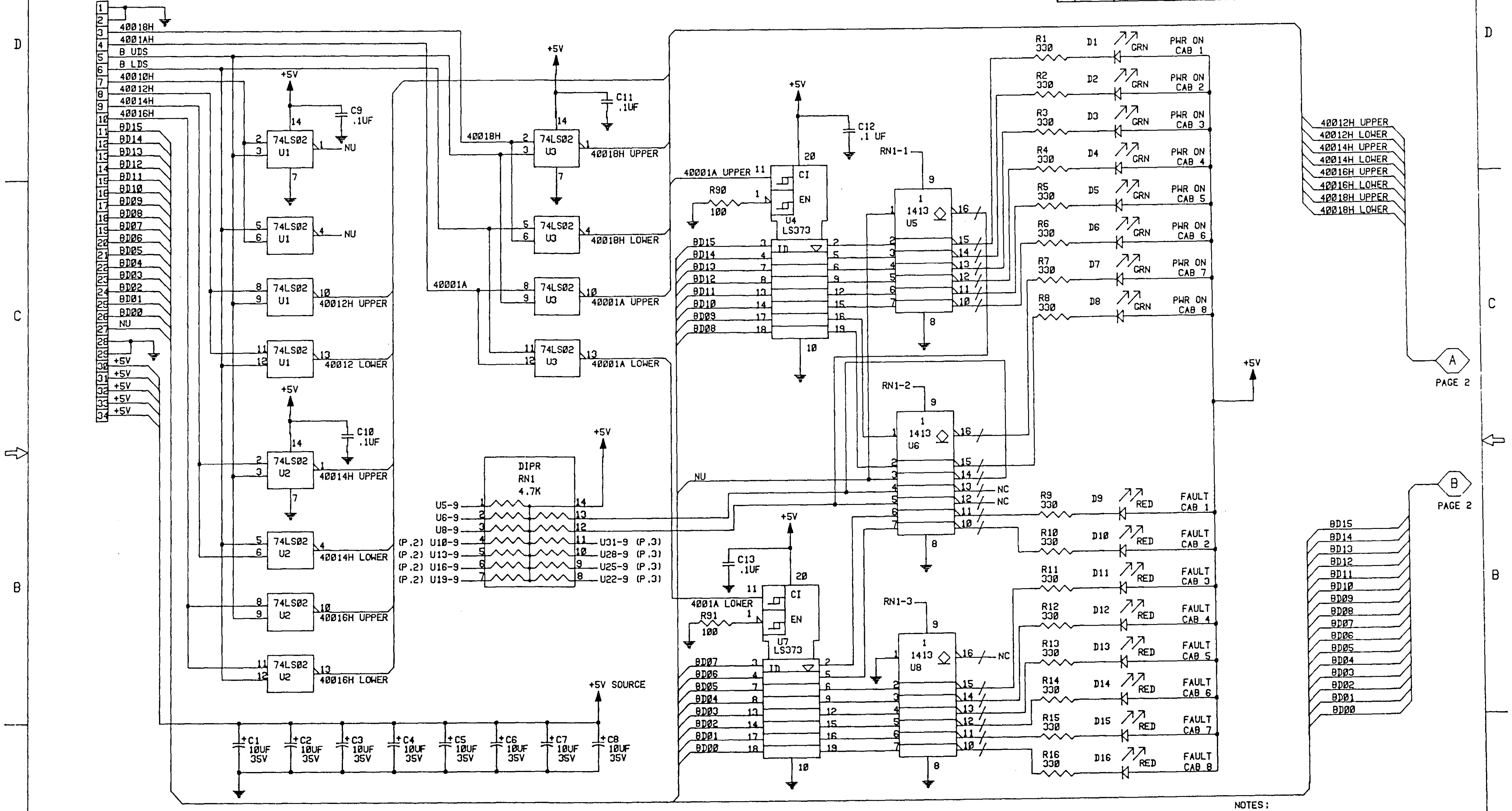
CONTROL DATA CORPORATION ARDEN HILLS OPERATIONS	MONITOR MODULE	CODE IDENT 34010	SIZE C	DWG NO 10303289	REV D
			SHEET 6 OF 6		

ED-SCHEMATICS

DISPLAY/MULTIPLEXER MODULE

Description for the following diagram will be included in a later revision.

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	XXXXX	CLASS A DRAWING	CHN	06-8	CHN	JCU
B	49891	REVISED & REDRAWN PER ECO	CHN	07-8	CHN	JCU



NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LISTS
1
2
3
4
5

DRN	CHI H. NGUYEN 6-29-88
CHKD	CHI H. NGUYEN 6-29-88
DSGN	JUAN C. URBI 6-29-88
MFG	DAN L. BARTELS 6-29-88
APVD	JUAN C. URBI 6-29-88

CONTROL DATA CORPORATION
ARDEN HILLS OPERATION
ST. PAUL, MN.

TITLE
DISPLAY/MUX MODULE

EQUIP NO. GD311-A

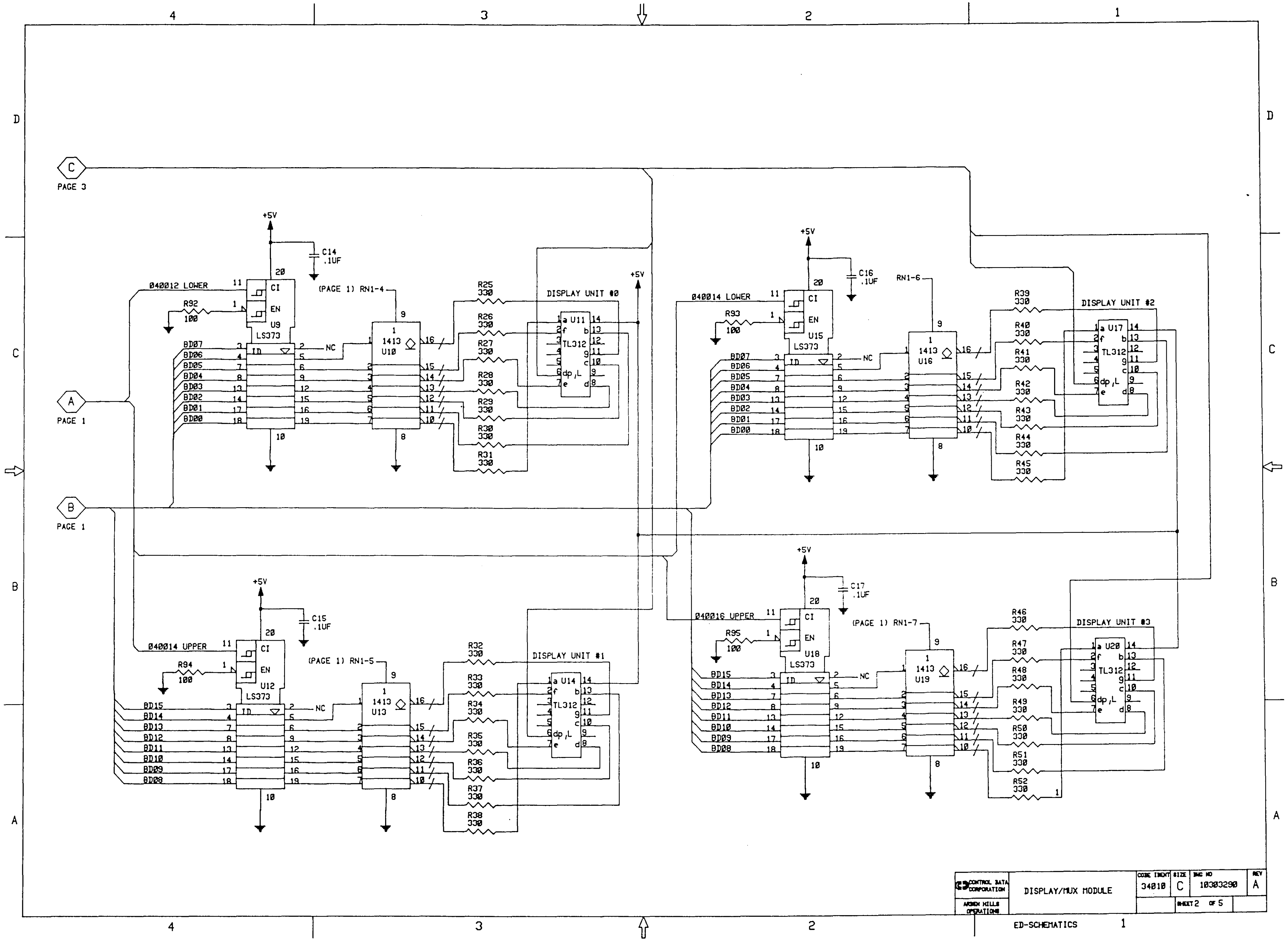
SIZE	FSCM NO.	DWG NO.
C	34010	10303290

THIRD ANGLE PROJECTION

SCALE
SHEET 1 OF 5

ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



CONTROL DATA CORPORATION
ARDEN HILLS OPERATIONS

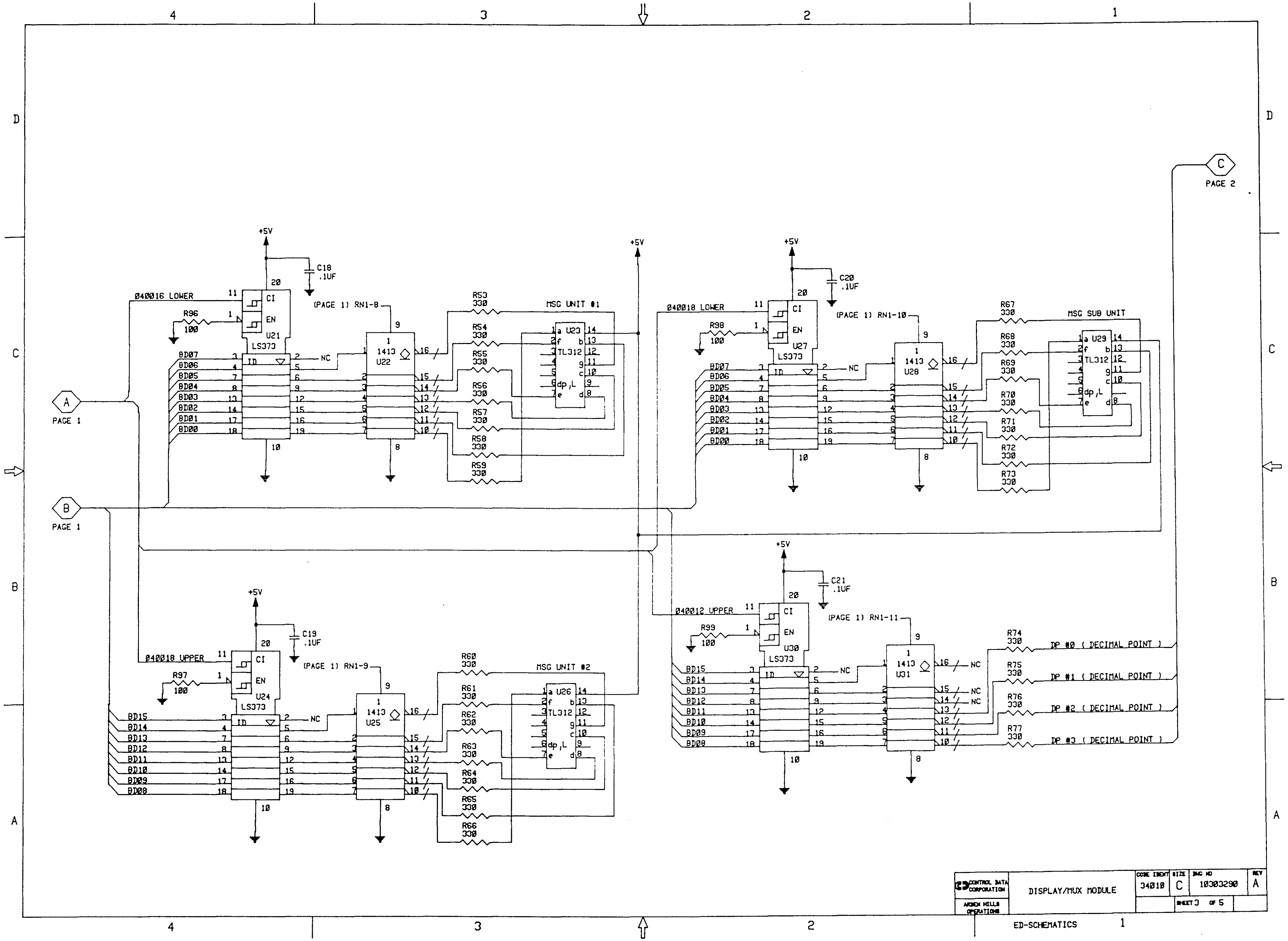
DISPLAY/MUX MODULE

CODE IDENT	SIZE	DWG NO	REV
34010	C	10303290	A

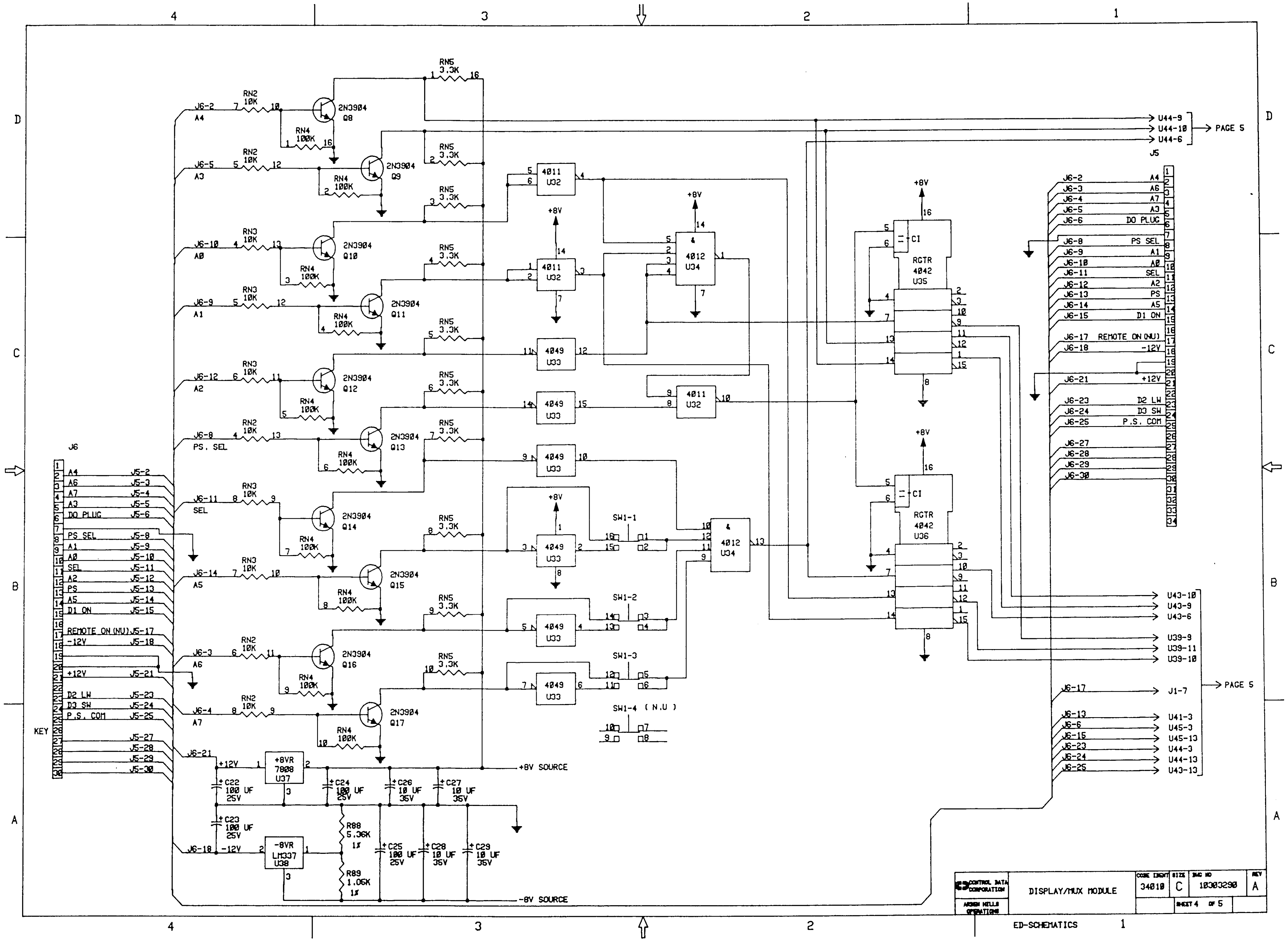
SHEET 2 OF 5

ED-SCHEMATICS

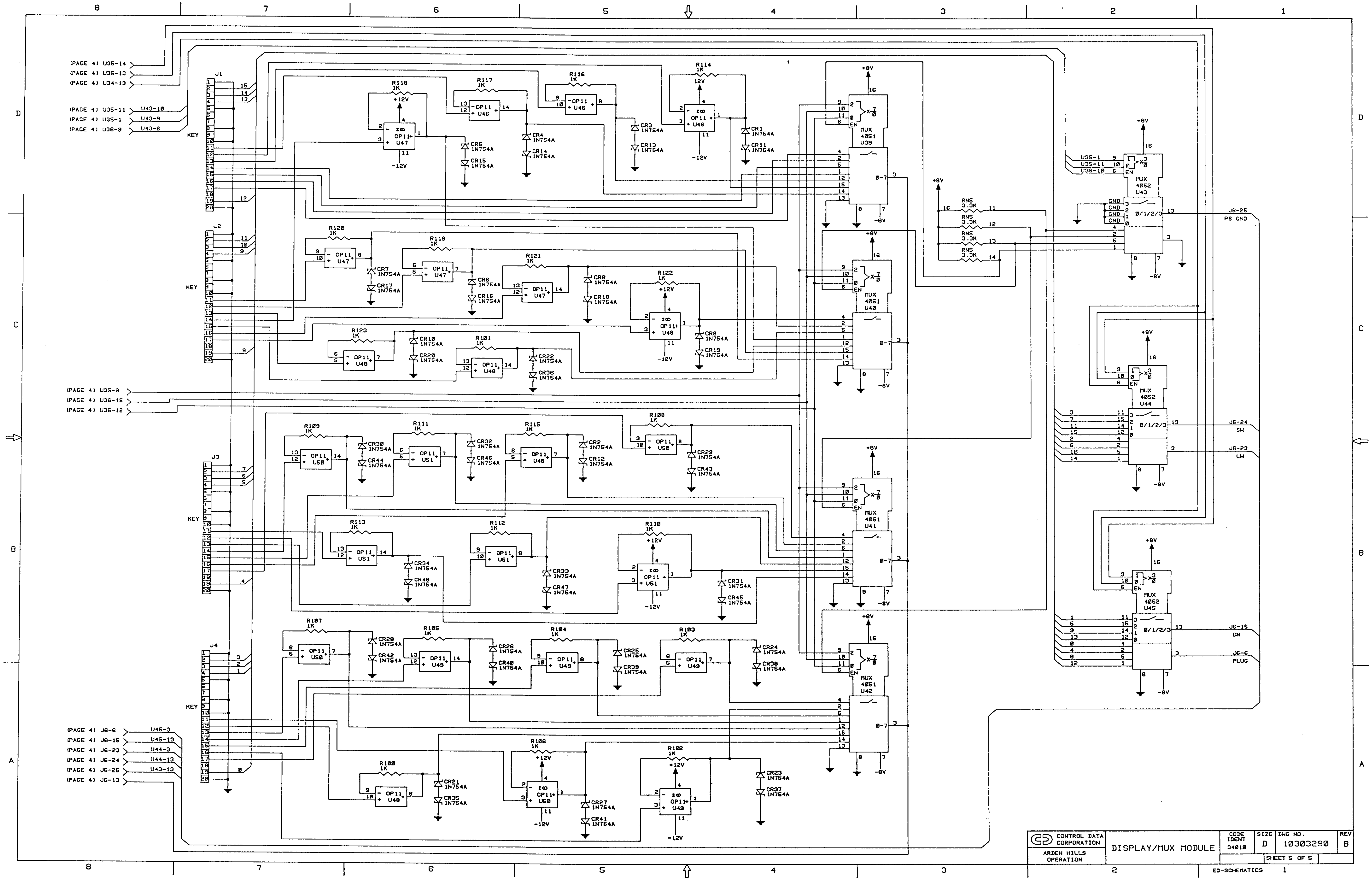
Description for the following diagram will be included in a later revision.


DISPLAY/MUX MODULE
CONTROL DATA CORPORATION
ARDEN HILLS OPERATIONS
CODE IDENT 34010
SIZE C
DWG NO 10303290
REV A
SHEET 3 OF 5
ED-SCHEMATICS
A PAGE 1
B PAGE 1
C PAGE 2
+5V
C18 .1UF
C19 .1UF
C20 .1UF
C21 .1UF
040016 LOWER
040018 LOWER
040018 UPPER
040012 UPPER
R96 100
R97 100
R98 100
R99 100
U21 LS373
U24 LS373
U27 LS373
U30 LS373
U22 1413
U25 1413
U28 1413
U31 1413
U23 TL312
U26 TL312
U29 TL312
(PAGE 1) RN1-8
(PAGE 1) RN1-9
(PAGE 1) RN1-10
(PAGE 1) RN1-11
MSG UNIT #1
MSG UNIT #2
MSG SUB UNIT
R53 330
R54 330
R55 330
R56 330
R57 330
R58 330
R59 330
R60 330
R61 330
R62 330
R63 330
R64 330
R65 330
R66 330
R67 330
R68 330
R69 330
R70 330
R71 330
R72 330
R73 330
R74 330
R75 330
R76 330
R77 330
DP #0 (DECIMAL POINT)
DP #1 (DECIMAL POINT)
DP #2 (DECIMAL POINT)
DP #3 (DECIMAL POINT)
BD00
BD01
BD02
BD03
BD04
BD05
BD06
BD07
BD08
BD09
BD10
BD11
BD12
BD13
BD14
BD15
NC
CI
EN
1D
dp,L

Description for the following diagram will be included in a later revision.

J6-2
A4
RN2 10K
RN4 100K
2N3904 Q8
J6-5
A3
2N3904 Q9
J6-10
A0
RN3 10K
2N3904 Q10
J6-9
A1
2N3904 Q11
J6-12
A2
2N3904 Q12
J6-8
PS. SEL
2N3904 Q13
J6-11
SEL
2N3904 Q14
J6-14
A5
2N3904 Q15
J6-3
A6
2N3904 Q16
J6-4
A7
2N3904 Q17
RN5 3.3K
4011 U32
4012 U34
4049 U33
+8V
SW1-1
SW1-2
SW1-3
SW1-4 (N.U)
RGTR 4042 U35
RGTR 4042 U36
CI
U44-9
U44-10
U44-6
PAGE 5
J5
J6-2 A4
J6-3 A6
J6-4 A7
J6-5 A3
J6-6 DO PLUG
J6-8 PS SEL
J6-9 A1
J6-10 A0
J6-11 SEL
J6-12 A2
J6-13 PS
J6-14 A5
J6-15 D1 ON
J6-17 REMOTE ON (NU)
J6-18 -12V
J6-21 +12V
J6-23 D2 LW
J6-24 D3 SW
J6-25 P.S. COM
J6-27
J6-28
J6-29
J6-30
U43-10
U43-9
U43-6
U39-9
U39-11
U39-10
J6-17 J1-7
J6-13 U41-3
J6-6 U45-3
J6-15 U45-13
J6-23 U44-3
J6-24 U44-13
J6-25 U43-13
J6
A4 J5-2
A6 J5-3
A7 J5-4
A3 J5-5
DO PLUG J5-6
PS SEL J5-8
A1 J5-9
A0 J5-10
SEL J5-11
A2 J5-12
PS J5-13
A5 J5-14
D1 ON J5-15
REMOTE ON (NU) J5-17
-12V J5-18
+12V J5-21
D2 LW J5-23
D3 SW J5-24
P.S. COM J5-25
J5-27
J5-28
J5-29
J5-30
KEY
J6-21
+12V
+8VR 7808 U37
C22 100 UF 25V
C24 100 UF 25V
C26 10 UF 35V
C27 10 UF 35V
+8V SOURCE
C23 100 UF 25V
J6-18
-12V
-8VR LM337 U38
R88 5.36K 1%
R89 1.06K 1%
C25 100 UF 25V
C28 10 UF 35V
C29 10 UF 35V
-8V SOURCE
CONTROL DATA CORPORATION
ARDEN HILLS OPERATIONS
DISPLAY/MUX MODULE
CODE IDENT 34010
SIZE C
DWG NO 10303290
REV A
SHEET 4 OF 5
ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



CONTROL DATA CORPORATION

ARDEN HILLS OPERATION

DISPLAY/MUX MODULE

CODE IDENT	SIZE	DWG NO.	REV
34010	D	10303290	B

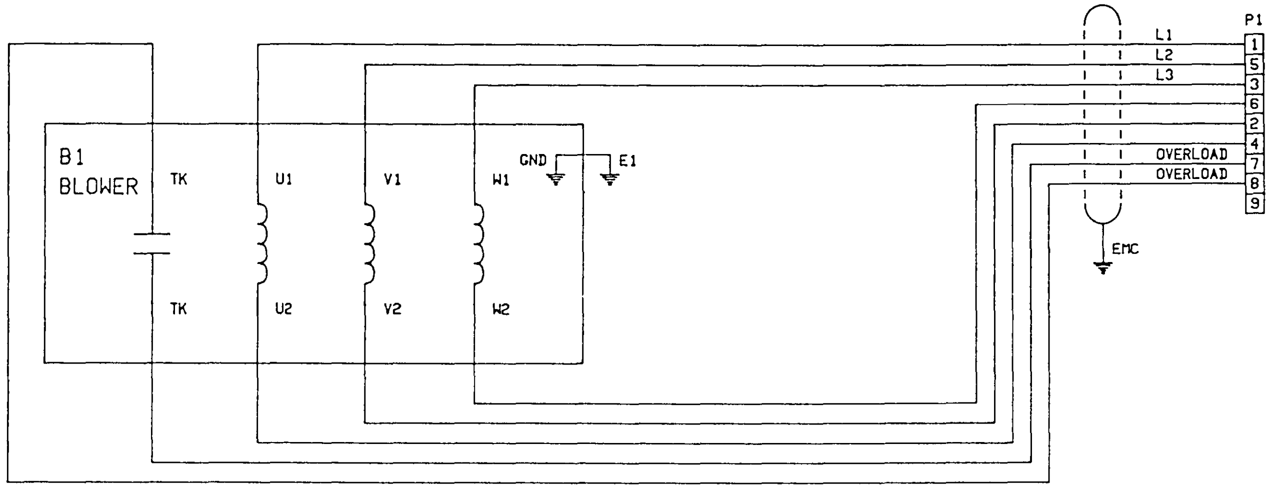
SHEET 5 OF 5

ED-SCHEMATICS

BLOWER ASSEMBLY

Description for the following diagram will be included in a later revision.

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	XXXXX	CLASS A DRAWING	TOC	03-8	TOC	REH



50/60HZ INPUT/OVERLOAD SENSE
FROM B1J1

NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LISTS		
1	DWN	T. J. O'CONNOR 3-9-88
2	CHKD	T. J. O'CONNOR 3-9-88
3	ENGR	R. E. HELMBRECHT 3-15-88
4	MFG	D. L. BARTELS 3-15-88
5	APVD	R. E. HELMBRECHT 3-15-88

EQUIP NO. AD121A/GD311A

THIRD ANGLE PROJECTION

CONTROL DATA CORPORATION
ARDEN HILLS OPERATION
ST. PAUL, MN.

TITLE
POWER/MEM BLOWER
SCHEMATIC

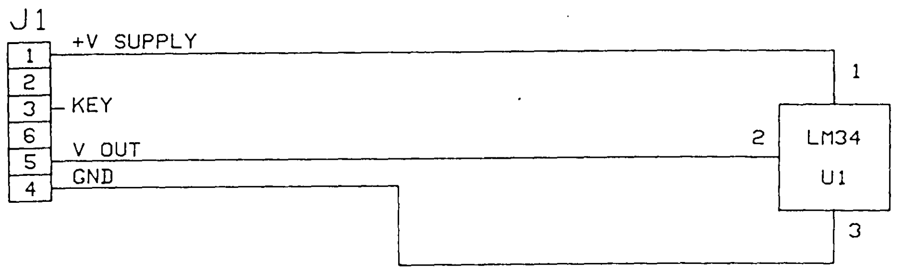
SIZE	FSCM NO.	DWG NO.
C	34010	22110679

SCALE
SHEET 1 OF 1

TEMPERATURE SENSOR

Description for the following diagram will be included in a later revision.

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A		CLASS A DRAWING	LPJ	09-7	LJ	RK



NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LIST				
1	DWN	LARRY JONES	6-01-87	
2	CHKD	LARRY JONES	7-01-87	
3	ENGR	Larry Jones	10/12/87	
4	MFC		10-9-87	
5	APVD		10/12/87	

CONTROL DATA CORPORATION
ARDEN HILLS OPERATION
ST. PAUL, MN.

TITLE
TEMP SENSE BOARD
SCHEMATIC

EQUIP NO.	SIZE	FSCM NO.	DWG NO.
AD121A	B	34010	22110636

THIRD ANGLE PROJECTION

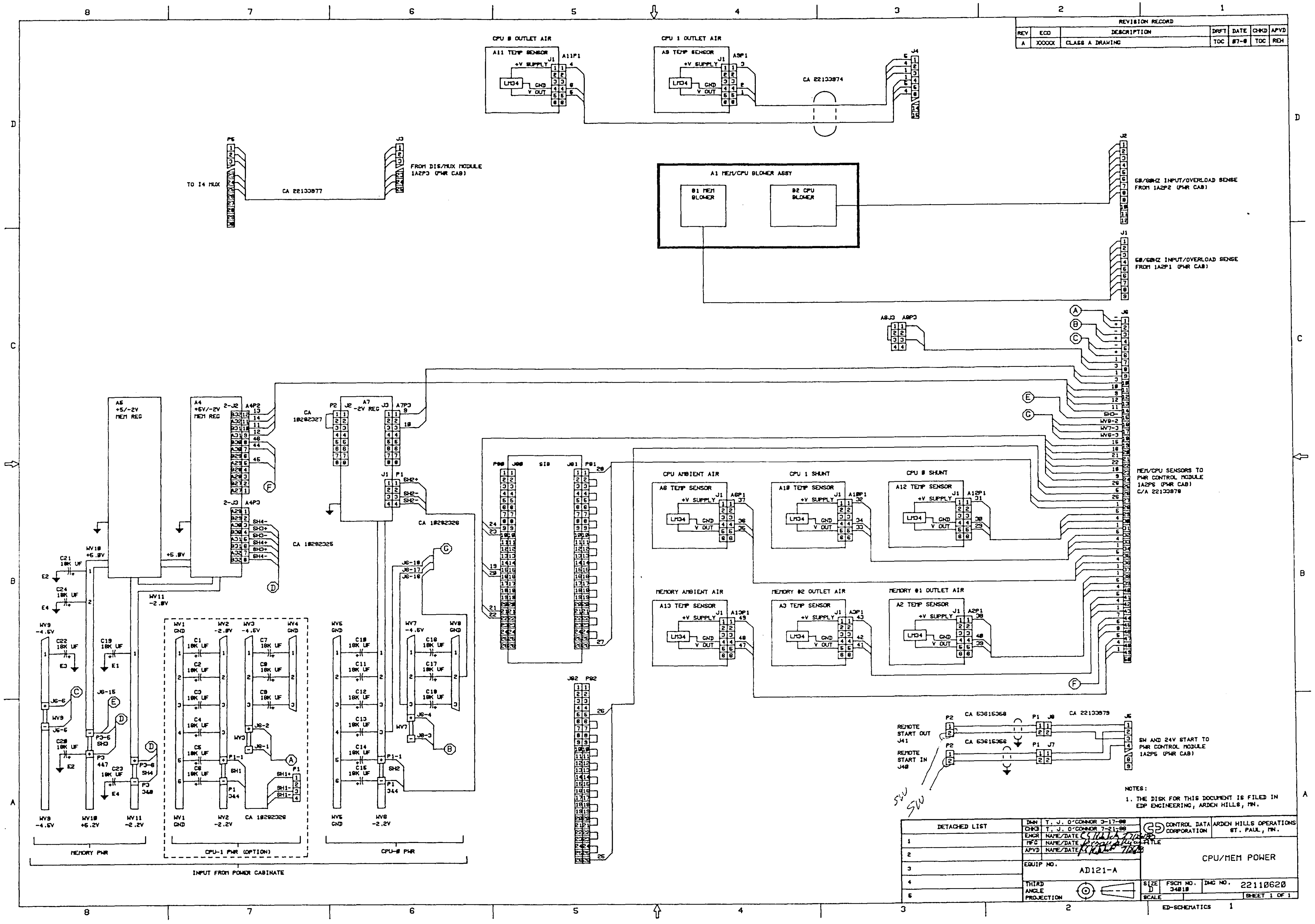
SCALE

SHEET 1 OF 1

ED-SCHEMATICS 1

CPU CABINET CABLING

Description for the following diagram will be included in a later revision.



REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	XXXXX	CLASS A DRAWING	TOC	07-0	TOC	REH

NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LIST
1
2
3
4
5

DWN T. J. O'CONNOR 3-17-88
CHKD T. J. O'CONNOR 7-21-88
ENGR NAME/DATE
MFG NAME/DATE
APVD NAME/DATE

EQUIP NO. AD121-A

THIRD ANGLE PROJECTION

CONTROL DATA CORPORATION
ARDEN HILLS OPERATIONS
ST. PAUL, MN.

TITLE
CPU/MEM POWER

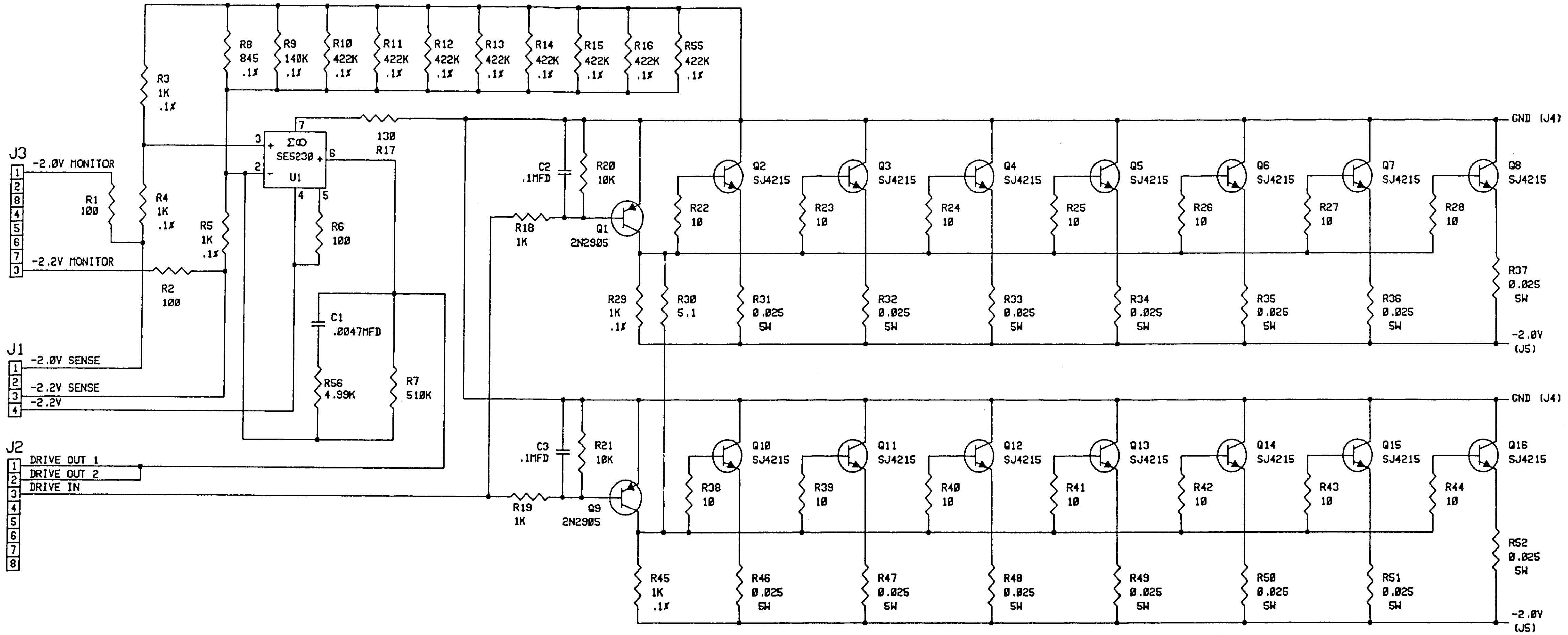
SIZE D
FSCM NO. 34010
DWG NO. 22110620
SCALE
SHEET 1 OF 1

ED-SCHEMATICS

CP REGULATOR MODULE

Description for the following diagram will be included in a later revision.

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	XXXXX	CLASS A DRAWING	LPJ	09-7	LPJ	BH
B	49800	ADDED CAP'S AND RESISTOR VALUE CHANGES	LPJ	07-8	LPJ	BH
C	49971	CAP VALUE CHANGE	LPJ	09-8	LPJ	BH



NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LISTS		
1	DWN	LARRY JONES 06-01-87
2	CHKD	LARRY JONES 06-15-87
3	ENGR	LARRY JONES 10-19-87
4	MFG	DAN BARTELS 10-19-87
5	APVD	BOB HELMBRECHT 10-19-87

CONTROL DATA CORPORATION
ARDEN HILLS OPERATION
ST. PAUL, MN.

TITLE
CPU REGULATOR
SCHEMATIC

EQUIP NO. AD121A

THIRD ANGLE PROJECTION

SIZE	FSCM NO.	DWG NO.
C	34010	22110621

SCALE

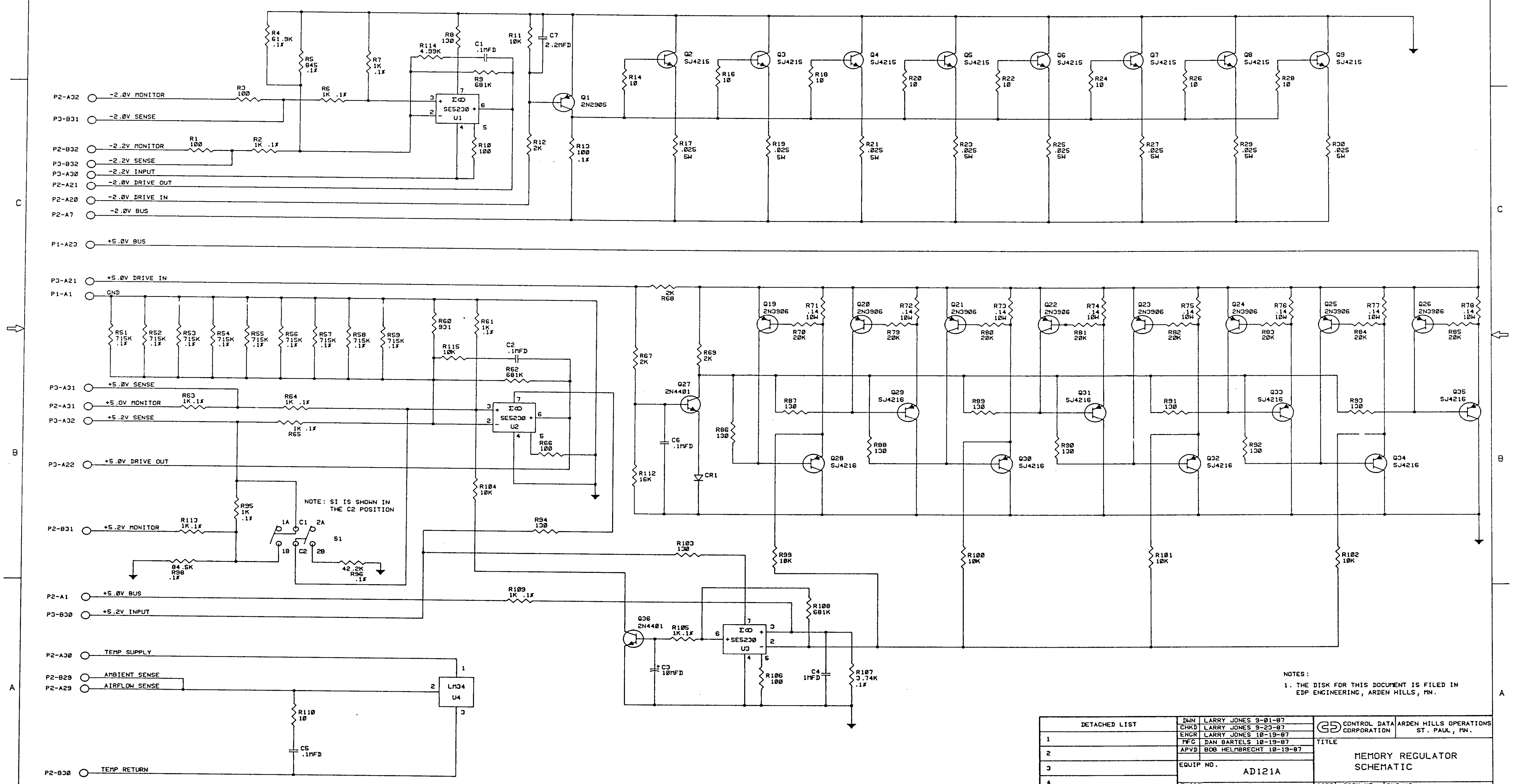
SHEET 1 OF 1

ED-SCHEMATICS

CM REGULATOR MODULE

Description for the following diagram will be included in a later revision.

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	XXXXX	CLASS A DRAWING	LPJ	09-7	LPJ	BH
B	49800	ADDED CAP'S AND RESISTOR VALUE CHANGES	LPJ	07-8	LPJ	BH
C	49971	ADDED CAP'S AND RESISTOR VALUE CHANGES	LPJ	09-8	LPJ	BH



NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LIST		
1	DWN	LARRY JONES 9-01-87
2	CHKD	LARRY JONES 9-23-87
3	ENGR	LARRY JONES 10-19-87
4	MFG	DAN BARTELS 10-19-87
5	APVD	BOB HELMBRECHT 10-19-87

EQUIP NO. AD121A

THIRD ANGLE PROJECTION

CONTROL DATA CORPORATION

ARDEN HILLS OPERATIONS
ST. PAUL, MN.

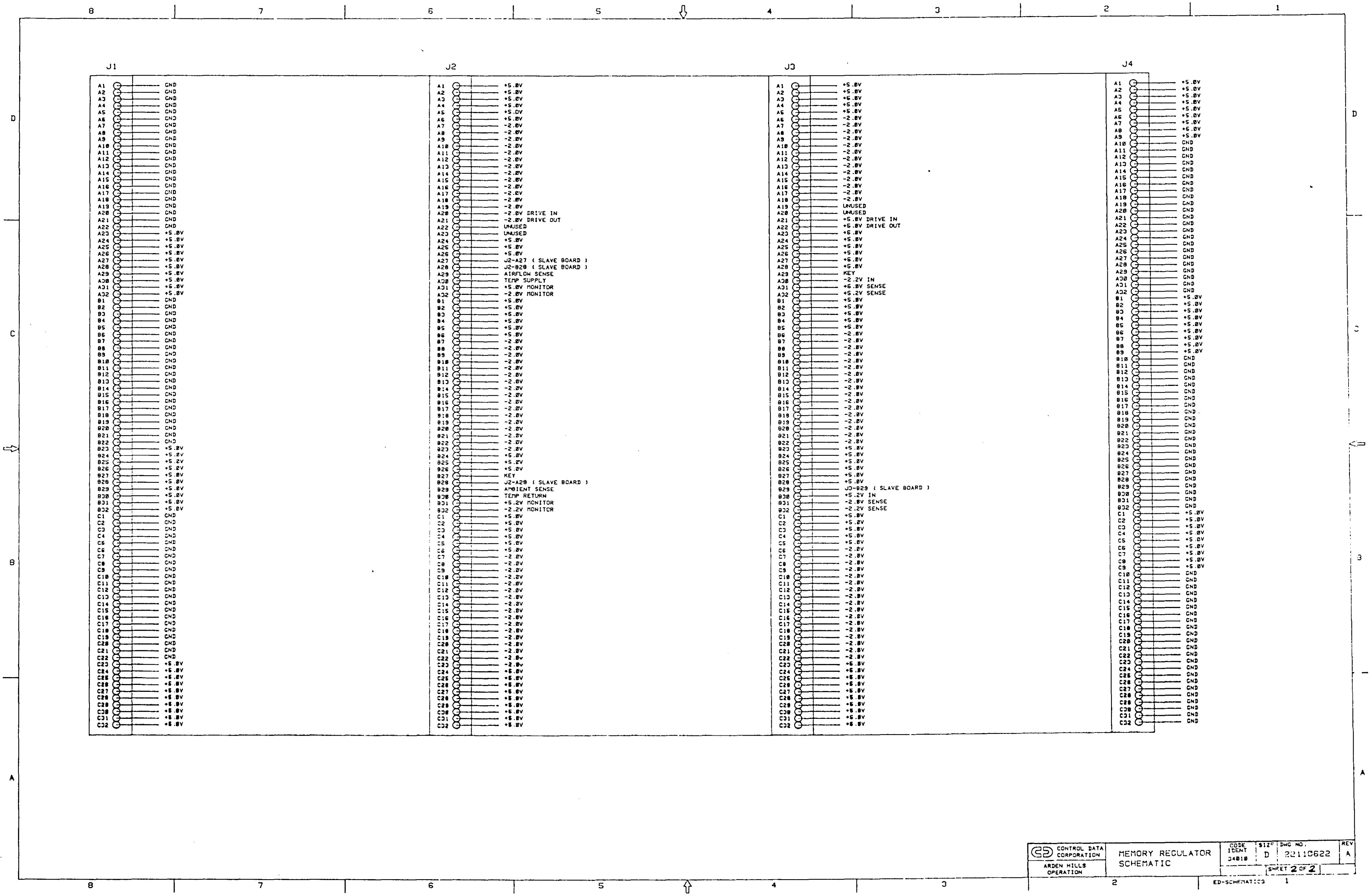
TITLE

MEMORY REGULATOR
SCHEMATIC

SIZE	FSCM NO.	DWG NO.
D	34010	22110622
SCALE		SHEET 1 OF 2

ED-SCHEMATICS

Description for the following diagram will be included in a later revision.



	J1	J2	J3	J4
A1	GND	+5.0V	+5.0V	+5.0V
A2	GND	+5.0V	+5.0V	+5.0V
A3	GND	+5.0V	+5.0V	+5.0V
A4	GND	+5.0V	+5.0V	+5.0V
A5	GND	+5.0V	+5.0V	+5.0V
A6	GND	+5.0V	-2.0V	+5.0V
A7	GND	-2.0V	-2.0V	+5.0V
A8	GND	-2.0V	-2.0V	+5.0V
A9	GND	-2.0V	-2.0V	+5.0V
A10	GND	-2.0V	-2.0V	GND
A11	GND	-2.0V	-2.0V	GND
A12	GND	-2.0V	-2.0V	GND
A13	GND	-2.0V	-2.0V	GND
A14	GND	-2.0V	-2.0V	GND
A15	GND	-2.0V	-2.0V	GND
A16	GND	-2.0V	-2.0V	GND
A17	GND	-2.0V	-2.0V	GND
A18	GND	-2.0V	-2.0V	GND
A19	GND	-2.0V	UNUSED	GND
A20	GND	-2.0V DRIVE IN	UNUSED	GND
A21	GND	-2.0V DRIVE OUT	+5.0V DRIVE IN	GND
A22	GND	UNUSED	+5.0V DRIVE OUT	GND
A23	+5.0V	UNUSED	+5.0V	GND
A24	+5.0V	+5.0V	+5.0V	GND
A25	+5.0V	+5.0V	+5.0V	GND
A26	+5.0V	+5.0V	+5.0V	GND
A27	+5.0V	J2-A27 (SLAVE BOARD)	+5.0V	GND
A28	+5.0V	J2-B28 (SLAVE BOARD)	+5.0V	GND
A29	+5.0V	AIRFLOW SENSE	KEY	GND
A30	+5.0V	TEMP SUPPLY	-2.2V IN	GND
A31	+5.0V	+5.0V MONITOR	+5.0V SENSE	GND
A32	+5.0V	-2.0V MONITOR	+5.2V SENSE	GND
B1	GND	+5.0V	+5.0V	+5.0V
B2	GND	+5.0V	+5.0V	+5.0V
B3	GND	+5.0V	+5.0V	+5.0V
B4	GND	+5.0V	+5.0V	+5.0V
B5	GND	+5.0V	+5.0V	+5.0V
B6	GND	+5.0V	-2.0V	+5.0V
B7	GND	-2.0V	-2.0V	+5.0V
B8	GND	-2.0V	-2.0V	+5.0V
B9	GND	-2.0V	-2.0V	+5.0V
B10	GND	-2.0V	-2.0V	GND
B11	GND	-2.0V	-2.0V	GND
B12	GND	-2.0V	-2.0V	GND
B13	GND	-2.0V	-2.0V	GND
B14	GND	-2.0V	-2.0V	GND
B15	GND	-2.0V	-2.0V	GND
B16	GND	-2.0V	-2.0V	GND
B17	GND	-2.0V	-2.0V	GND
B18	GND	-2.0V	-2.0V	GND
B19	GND	-2.0V	-2.0V	GND
B20	GND	-2.0V	-2.0V	GND
B21	GND	-2.0V	-2.0V	GND
B22	GND	-2.0V	-2.0V	GND
B23	+5.0V	-2.0V	+5.0V	GND
B24	+5.2V	+5.0V	+5.0V	GND
B25	+5.2V	+5.2V	+5.0V	GND
B26	+5.0V	+5.0V	+5.0V	GND
B27	+5.0V	KEY	+5.0V	GND
B28	+5.0V	J2-A28 (SLAVE BOARD)	+5.0V	GND
B29	+5.0V	AMBIENT SENSE	J3-B29 (SLAVE BOARD)	GND
B30	+5.0V	TEMP RETURN	+5.2V IN	GND
B31	+5.0V	+5.2V MONITOR	-2.0V SENSE	GND
B32	+5.0V	-2.2V MONITOR	-2.2V SENSE	GND
C1	GND	+5.0V	+5.0V	+5.0V
C2	GND	+5.0V	+5.0V	+5.0V
C3	GND	+5.0V	+5.0V	+5.0V
C4	GND	+5.0V	+5.0V	+5.0V
C5	GND	+5.0V	+5.0V	+5.0V
C6	GND	+5.0V	-2.0V	+5.0V
C7	GND	-2.0V	-2.0V	+5.0V
C8	GND	-2.0V	-2.0V	+5.0V
C9	GND	-2.0V	-2.0V	+5.0V
C10	GND	-2.0V	-2.0V	GND
C11	GND	-2.0V	-2.0V	GND
C12	GND	-2.0V	-2.0V	GND
C13	GND	-2.0V	-2.0V	GND
C14	GND	-2.0V	-2.0V	GND
C15	GND	-2.0V	-2.0V	GND
C16	GND	-2.0V	-2.0V	GND
C17	GND	-2.0V	-2.0V	GND
C18	GND	-2.0V	-2.0V	GND
C19	GND	-2.0V	-2.0V	GND
C20	GND	-2.0V	-2.0V	GND
C21	GND	-2.0V	-2.0V	GND
C22	GND	-2.0V	-2.0V	GND
C23	+5.0V	-2.0V	+5.0V	GND
C24	+5.0V	+5.0V	+5.0V	GND
C25	+5.0V	+5.0V	+5.0V	GND
C26	+5.0V	+5.0V	+5.0V	GND
C27	+5.0V	+5.0V	+5.0V	GND
C28	+5.0V	+5.0V	+5.0V	GND
C29	+5.0V	+5.0V	+5.0V	GND
C30	+5.0V	+5.0V	+5.0V	GND
C31	+5.0V	+5.0V	+5.0V	GND
C32	+5.0V	+5.0V	+5.0V	GND

CONTROL DATA CORPORATION
ARDEN HILLS OPERATION

MEMORY REGULATOR SCHEMATIC

CODE IDENT	SIZE	DWG NO.	REV
34818	D	22110622	A

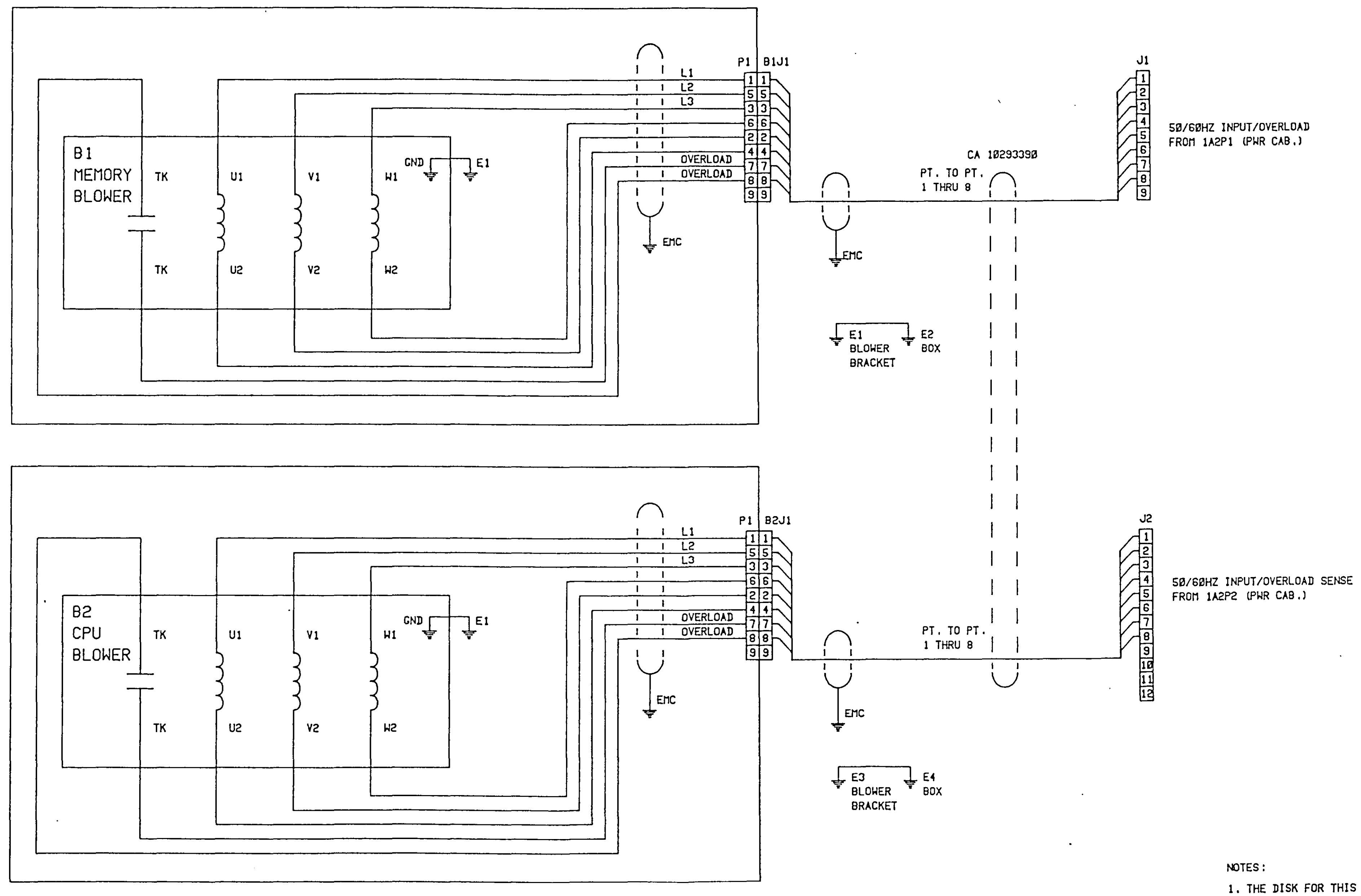
SHEET 2 OF 2

ED-SCHEMATICS

BLOWER ASSEMBLIES

Description for the following diagram will be included in a later revision.

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	XXXXX	CLASS A DRAWING	TOC	03-8	TOC	XXX



NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

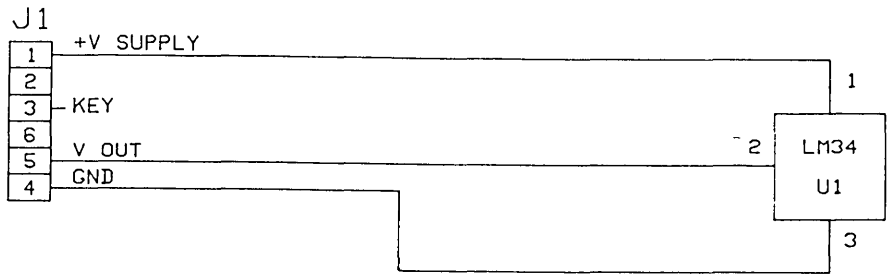
DETACHED LISTS				
1	DWN	T. J. O'CONNOR 3-10-88	CONTROL DATA CORPORATION	ARDEN HILLS OPERATION ST. PAUL, MN.
2	CHKD	T. J. O'CONNOR 3-10-88	TITLE	CPU/MEM BLOWER SCHEMATIC
3	ENGR	NAME/DATE 3/15/88		
4	MFG	NAME/DATE 3/15/88		
5	APVD	NAME/DATE 3/15/88		
	EQUIP NO. AD121A		SIZE C FSCM NO. 34010	DWG NO. 22110678
	THIRD ANGLE PROJECTION		SCALE	SHEET 1 OF 1

ED-SCHEMATICS

TEMPERATURE SENSOR

Description for the following diagram will be included in a later revision.

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A		CLASS A DRAWING	LPJ	09-7	LJ	RK



NOTES:

1. THE DISK FOR THIS DOCUMENT IS FILED IN EDP ENGINEERING, ARDEN HILLS, MN.

DETACHED LIST
1
2
3
4
5

DWN	LARRY JONES	6-01-87
CHKD	LARRY JONES	7-01-87
ENGR	Larry Jones	10/12/87
MFG		10-9-87
APVD		10/12/87
EQUIP NO.	AD121A	
THIRD ANGLE PROJECTION		

CONTROL DATA CORPORATION
ARDEN HILLS OPERATION
ST. PAUL, MN.

TITLE
TEMP SENSE BOARD SCHEMATIC

SIZE	FSCM NO.	DWG NO.
B	34010	22110636
SCALE		SHEET 1 OF 1

ED-SCHEMATICS

PAGE				REVISION RECORD					
4	3	2	1	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
-	A	A	A		CLASS A RELEASED	MES	2/15/88	KMS	WDT
-	B	B	B	CA49691	SEE ECO	MES	5/11/88	KMS	WDT
C	C	C	C	CA49806	SEE ECO	MES	7/28/88	KMS	WDT
C	D	C	D	CA49936	SEE ECO	MES	5/27/88	KMS	WDT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN

TOLERANCES

PLACE ± PLACE ± ANGLES ±

MATERIAL

FINISH

DETACHED LISTS

DWN	M.E. SCHMIDT	2/15/88
CHKD	W.D. TISCHER	3/15/88
ENGR	W.D. TISCHER	3/15/88
MFG	B.J. HARTWICK	3/15/88
APVD	W.D. TISCHER	3/15/88

EQUIP. NO. AT478-B

THIRD ANGLE PROJECTION

CONTROL DATA

ARDEN HILLS OPERATIONS
ST. PAUL. MINN.

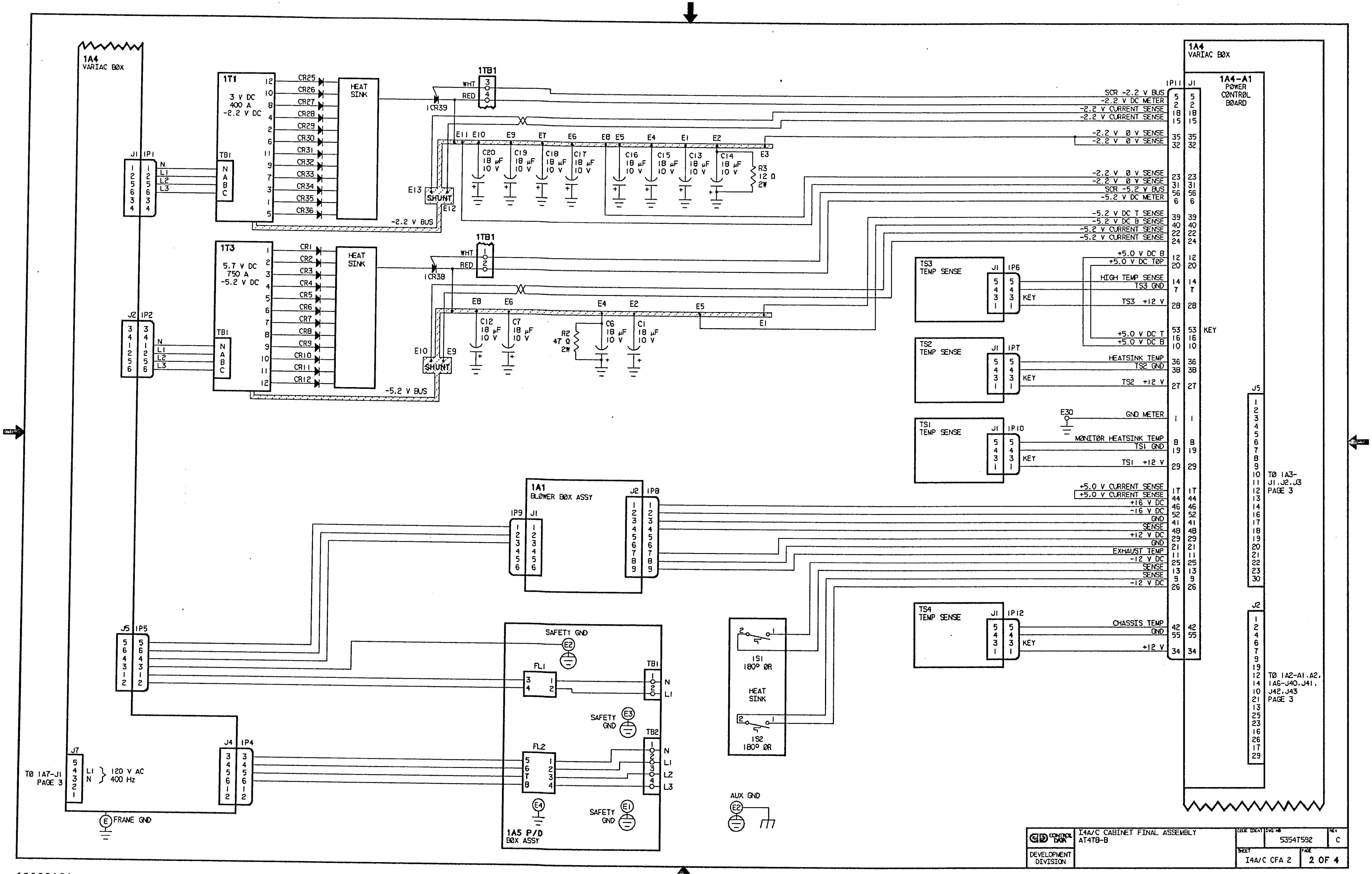
TITLE

I4A/C CABINET FINAL ASSEMBLY

SIZE D
FSCM NO. 34010
DWG NO. 53547592

SCALE
SHEET I4A/C CFA 1
PAGE 1 OF 4

Description for the following diagram will be included in a later revision.

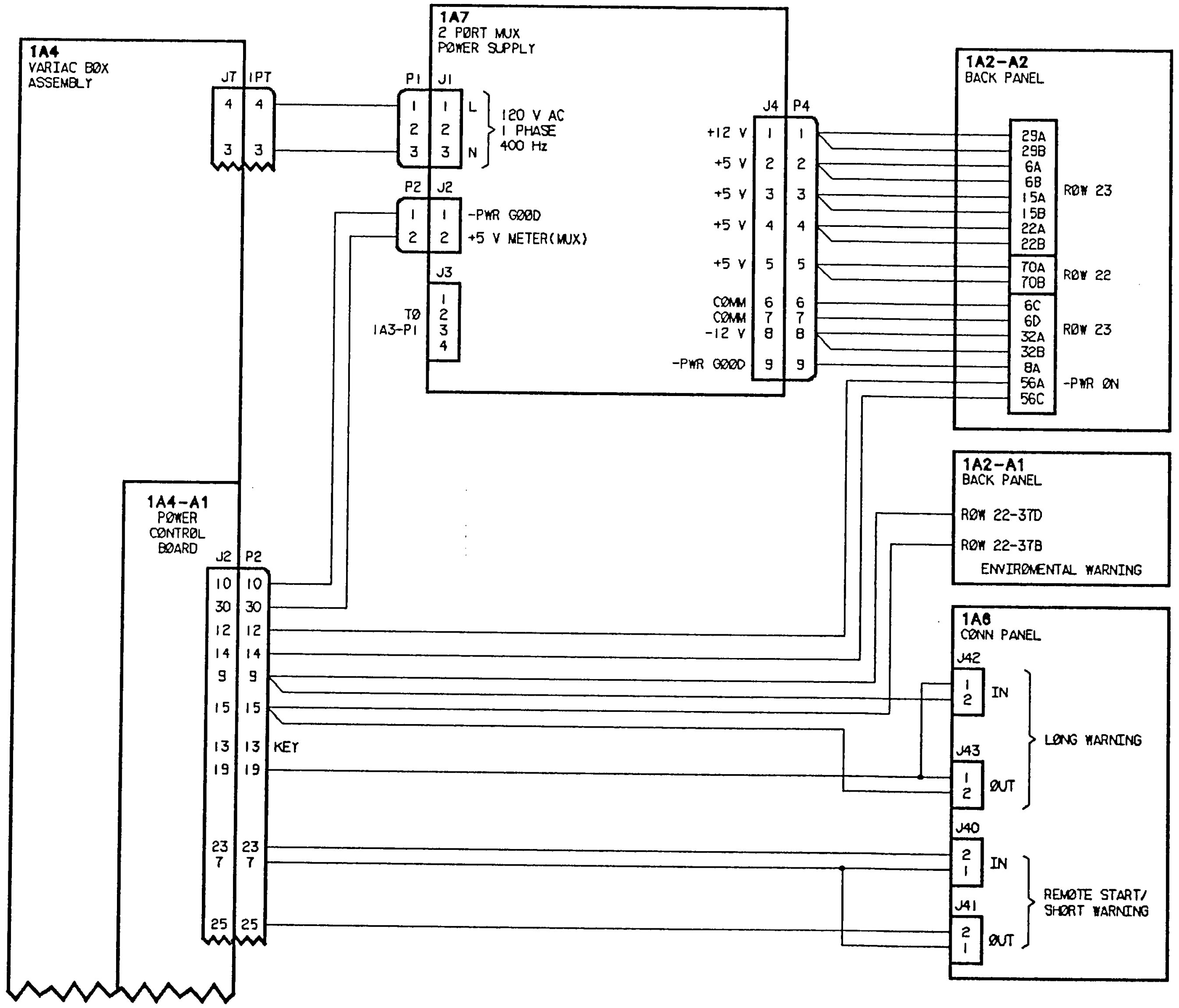


CONTROL DATA | I4A/C CABINET FINAL ASSEMBLY AT4T8-B | DWG NO 53547592 | REV C

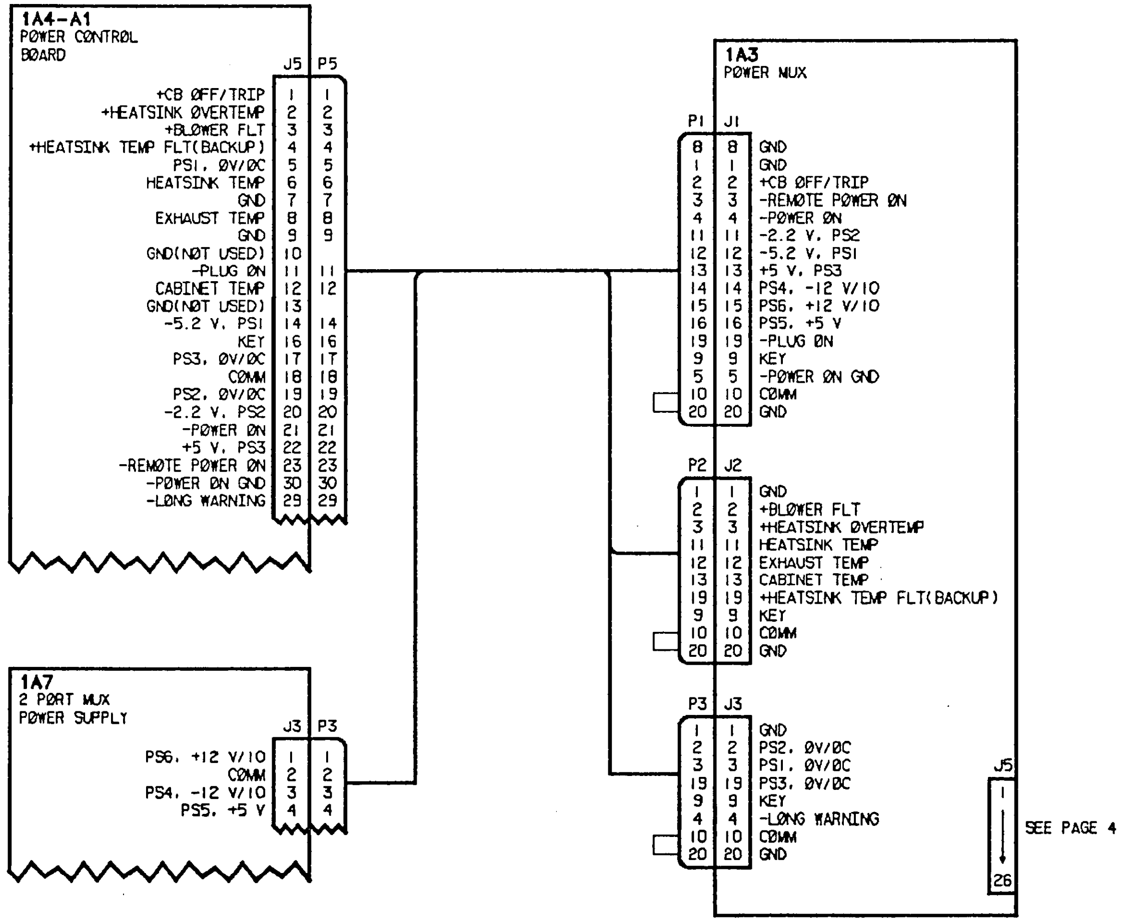
DEVELOPMENT DIVISION | SHEET I4A/C CFA 2 | PAGE 2 OF 4

Description for the following diagram will be included in a later revision.

AT478-B
CABINET FINAL ASSEMBLY

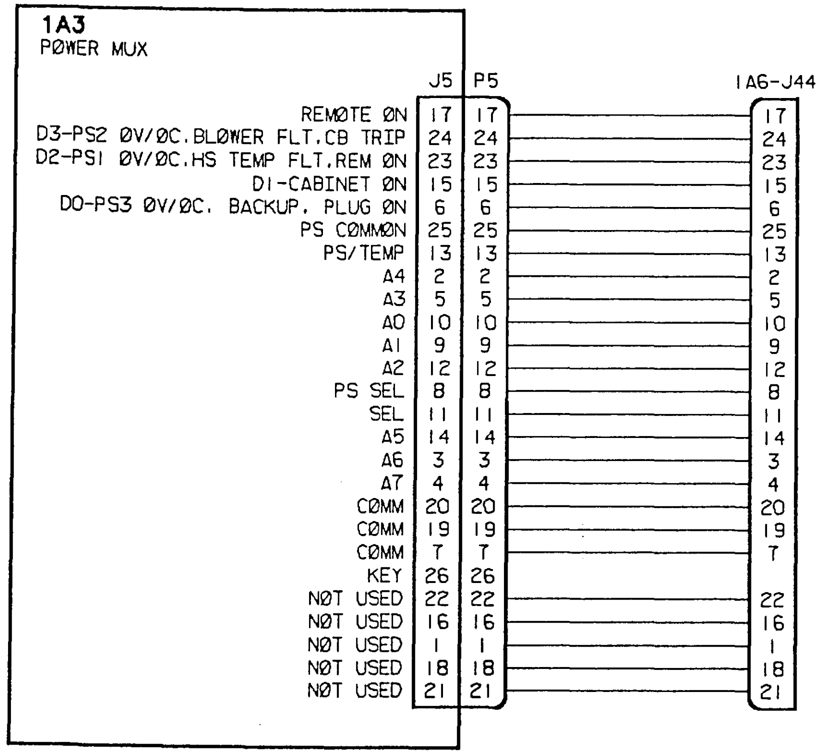


AT478-B
CABINET FINAL ASSEMBLY



CONTROL DATA	I4A/C CABINET FINAL ASSEMBLY AT478-B	DWG NO 5354T592	REV D
DEVELOPMENT DIVISION		SHEET I4A/C CFA 3	PAGE 3 OF 4

AT478-B
CABINET FINAL ASSEMBLY



CONTROL DATA	I4A/C CABINET FINAL ASSEMBLY AT478-B	CODE IDENT	DWG NØ 53547592	REV C
DEVELOPMENT DIVISION		C	SHEET I4A/C CFA 4	PAGE 4 OF 4

PAGE					REVISION RECORD					
5	4	3	2	1	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
–	A	A	A	A		CLASS A RELEASED	MES	2/23/88	KWS	WDT
B	B	B	B	B	CA49806	SEE ECO	MES	7/28/88	KWS	WDT
B	C	B	B	C	CA49936	SEE ECO	MES	9/27/88	KWS	WDT

DETACHED LISTS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN ______
TOLERANCES
PLACE ± ______ PLACE ± ______ ANGLES ± ______

MATERIAL

FINISH

DWN	M.E. SCHMIDT	2/23/88
CHKD	W.D. TISCHER	3/15/88
ENGR	W.D. TISCHER	3/15/88
MFG	B.J. HARTWICK	3/15/88
APVD	W.D. TISCHER	3/15/88

EQUIP. NO. AT481-B

THIRD ANGLE PROJECTION

CONTROL DATA

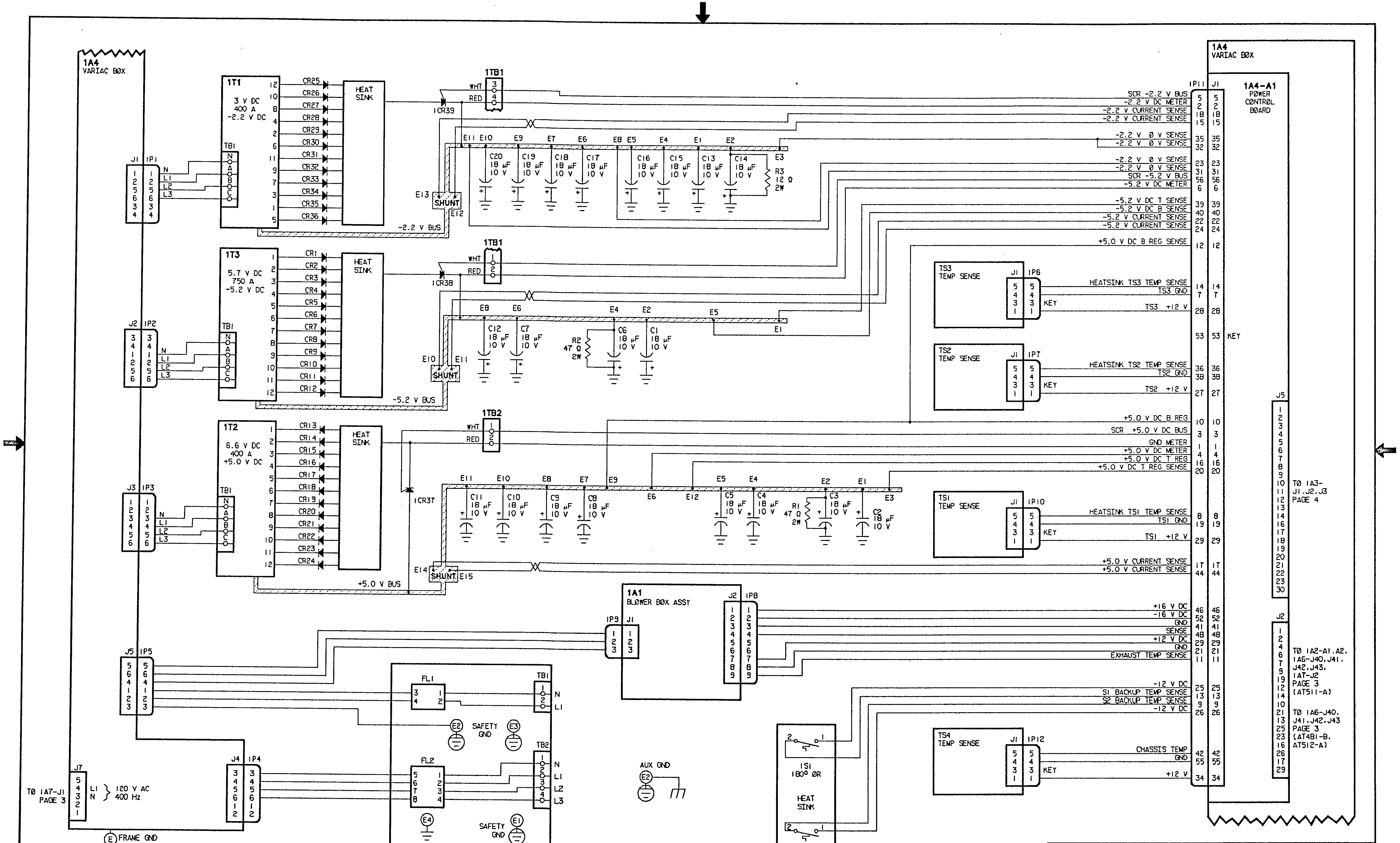
ARDEN HILLS OPERATIONS
ST. PAUL. MINN.

TITLE
I4 CABINET
AT481-B/AT511-A/AT512-A
FINAL ASSEMBLY

SIZE D
FSCM NO. 34010
DWG NO. 53547593

SCALE
SHEET I4 CFA 1
PAGE 1 OF 5

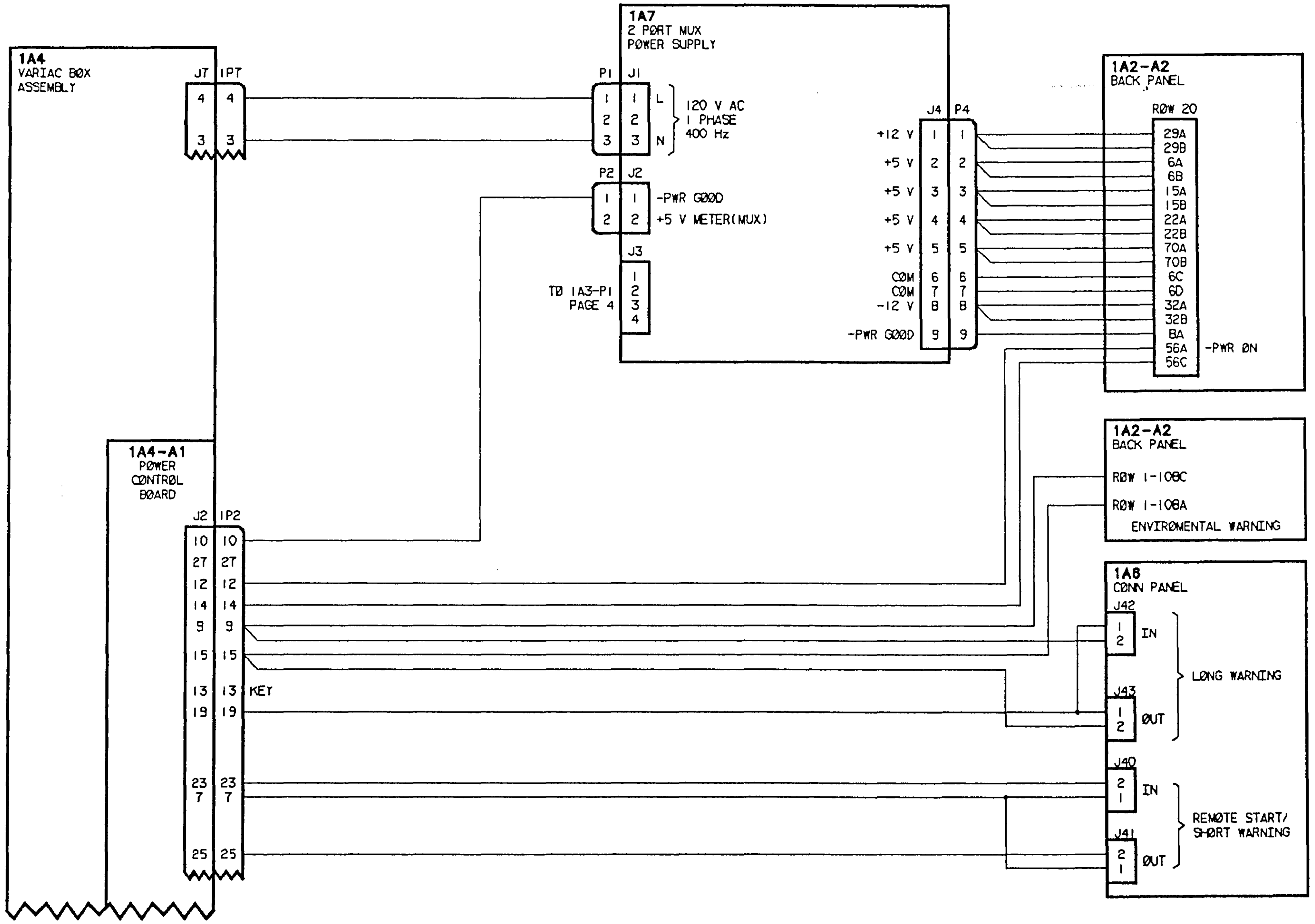
Description for the following diagram will be included in a later revision.



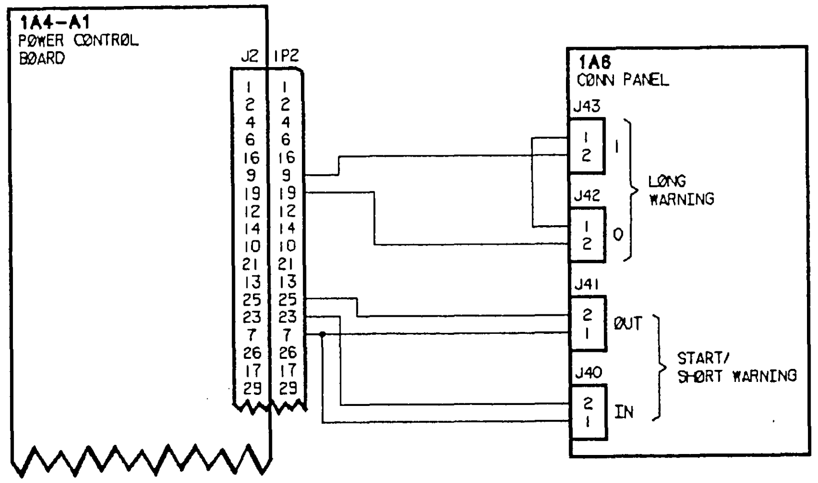
CONTROL DATA	I4 CABINET FINAL ASSEMBLY AT4B1-B/AT511-A/AT512-A	CODE IDENT	DWG NO 53547593
			REV B
DEVELOPMENT DIVISION		SHEET I4 CFA 2	PAGE 2 OF 5

Description for the following diagram will be included in a later revision.

AT511-A
CABINET FINAL ASSEMBLY



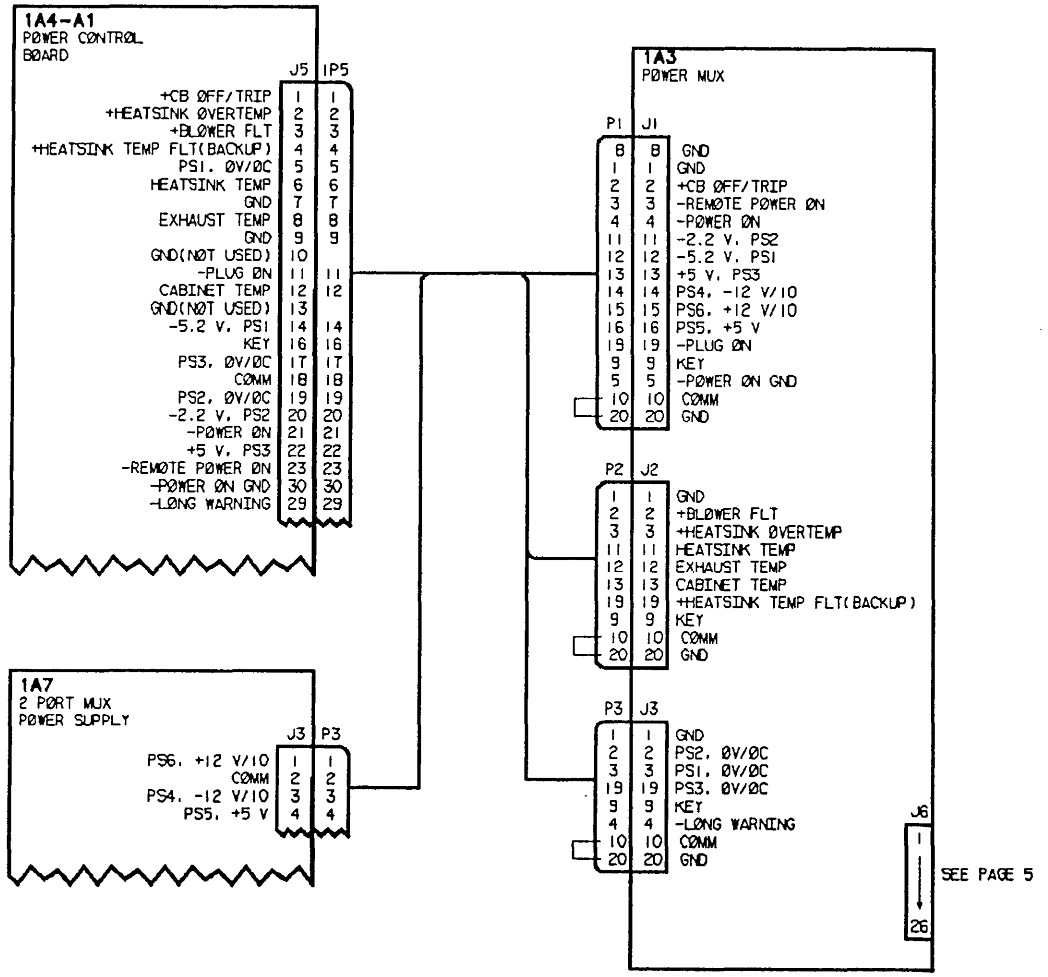
AT481-B/AT512-A
CABINET FINAL ASSEMBLY



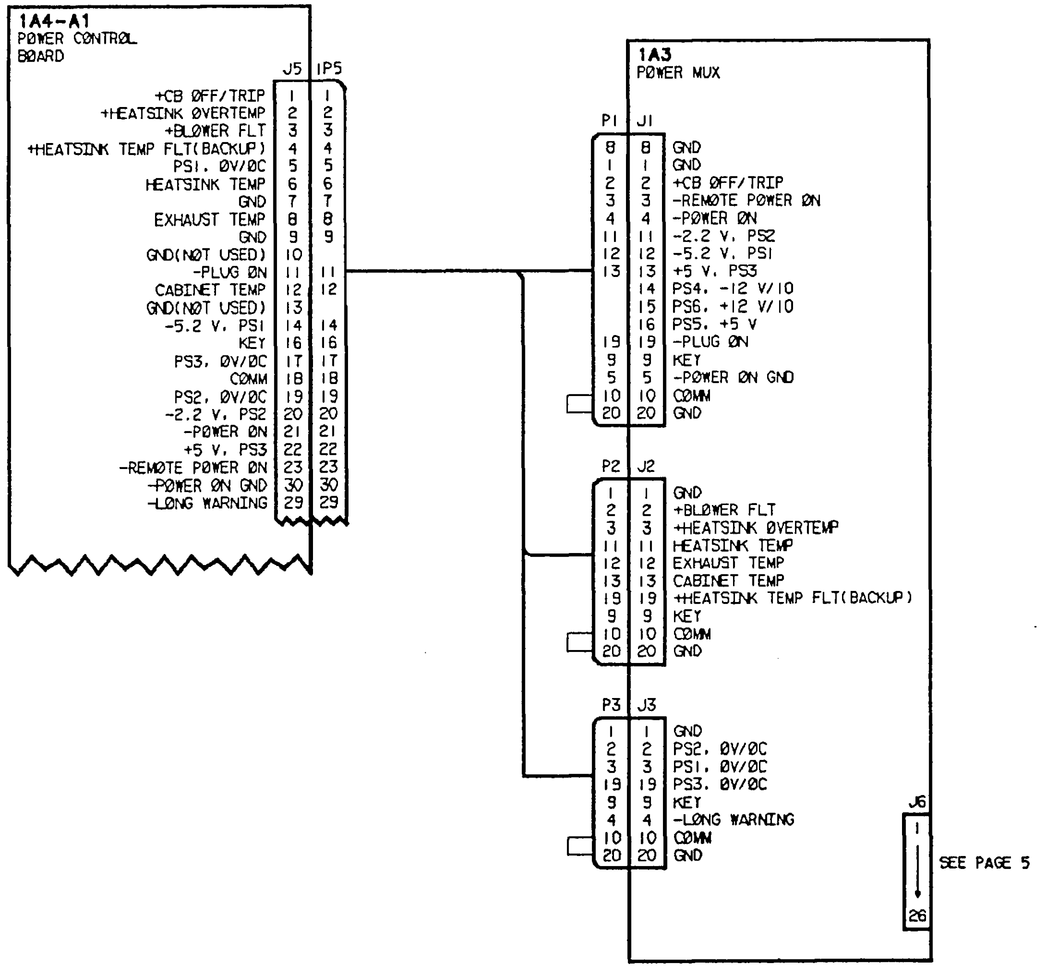
CONTROL DATA	I4 CABINET FINAL ASSEMBLY AT481-B/AT511-A/AT512-A	CODE IDENT	DWG NO 53547593	REV B
DEVELOPMENT DIVISION		SHEET I4 CFA 3	PAGE 3 OF 5	

Description for the following diagram will be included in a later revision.

AT511-A
CABINET FINAL ASSEMBLY



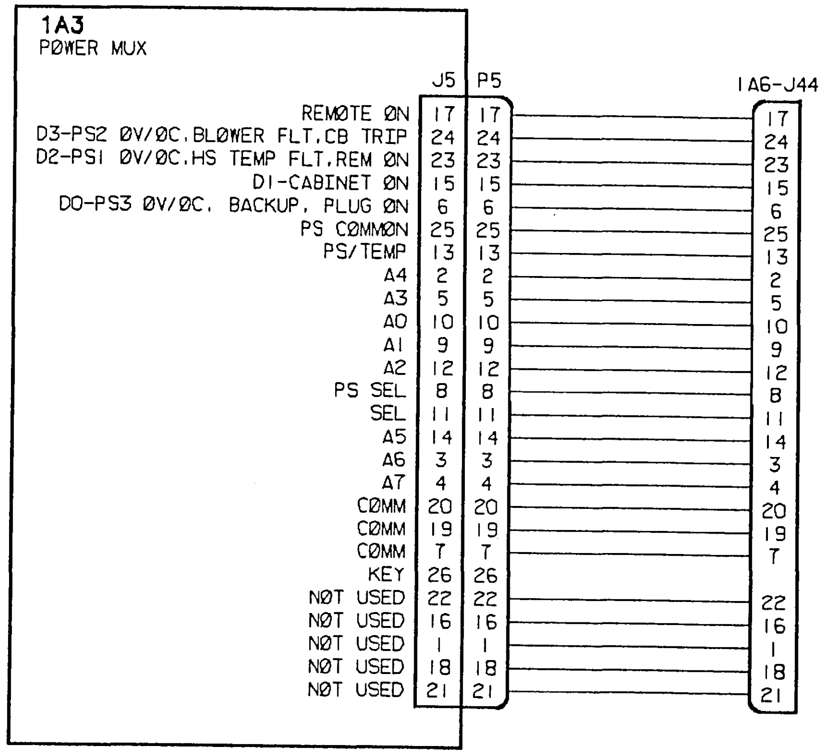
AT481-B/AT512-A
CABINET FINAL ASSEMBLY



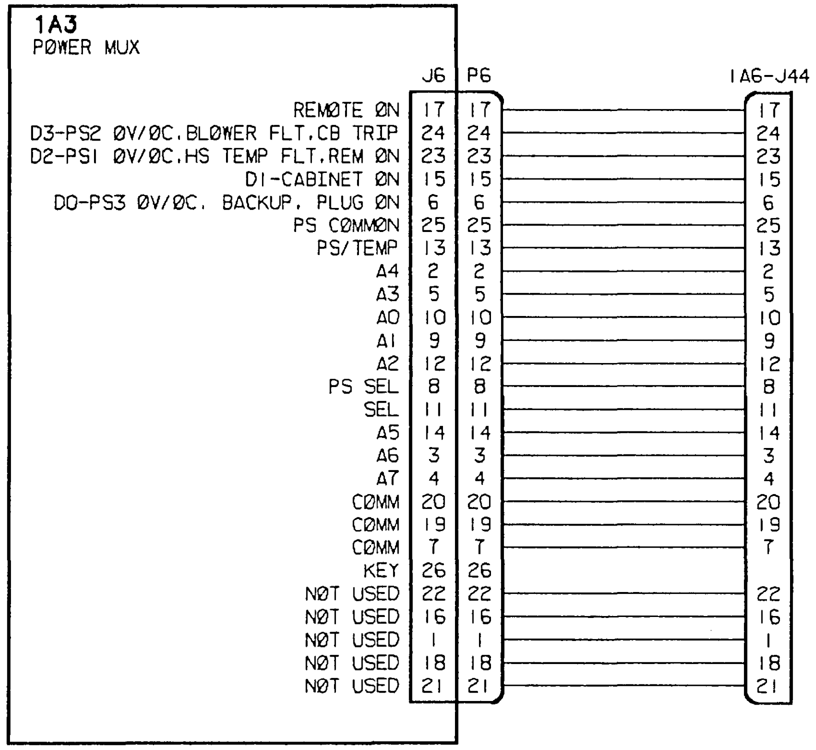
CONTROL DATA
DEVELOPMENT DIVISION
I4 CABINET FINAL ASSEMBLY
AT511-A. AT481-B/AT512-A
CODE IDENT
DWG NO 53547593
REV C
SHEET I4 CFA 4
PAGE 4 OF 5

Description for the following diagram will be included in a later revision.

AT511-A
CABINET FINAL ASSEMBLY



AT481-B/AT512-A
CABINET FINAL ASSEMBLY



CONTROL DATA	I4 CABINET FINAL ASSEMBLY AT511-A, AT481-B/AT512-A	CODE IDENT	DWG NO 53547593		REV B
DEVELOPMENT DIVISION		C	SHEET I4 CFA 5	PAGE 5 OF 5	

PAGE		REVISION RECORD					
2	1	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	A		CLASS A RELEASED	MES	2/15/88	KWS	WDT

DETACHED LISTS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN ______
TOLERANCES
PLACE ± ______ PLACE ± ______ ANGLES ± ______

MATERIAL

FINISH

DWN	M.E. SCHMIDT	2/15/88
CHKD	W.D. TISCHER	3/15/88
ENGR	W.D. TISCHER	3/15/88
MFG	B.J. HARTWICK	3/15/88
APVD	W.D. TISCHER	3/15/88

EQUIP. NO. AT478-B

THIRD ANGLE PROJECTION

CONTROL DATA

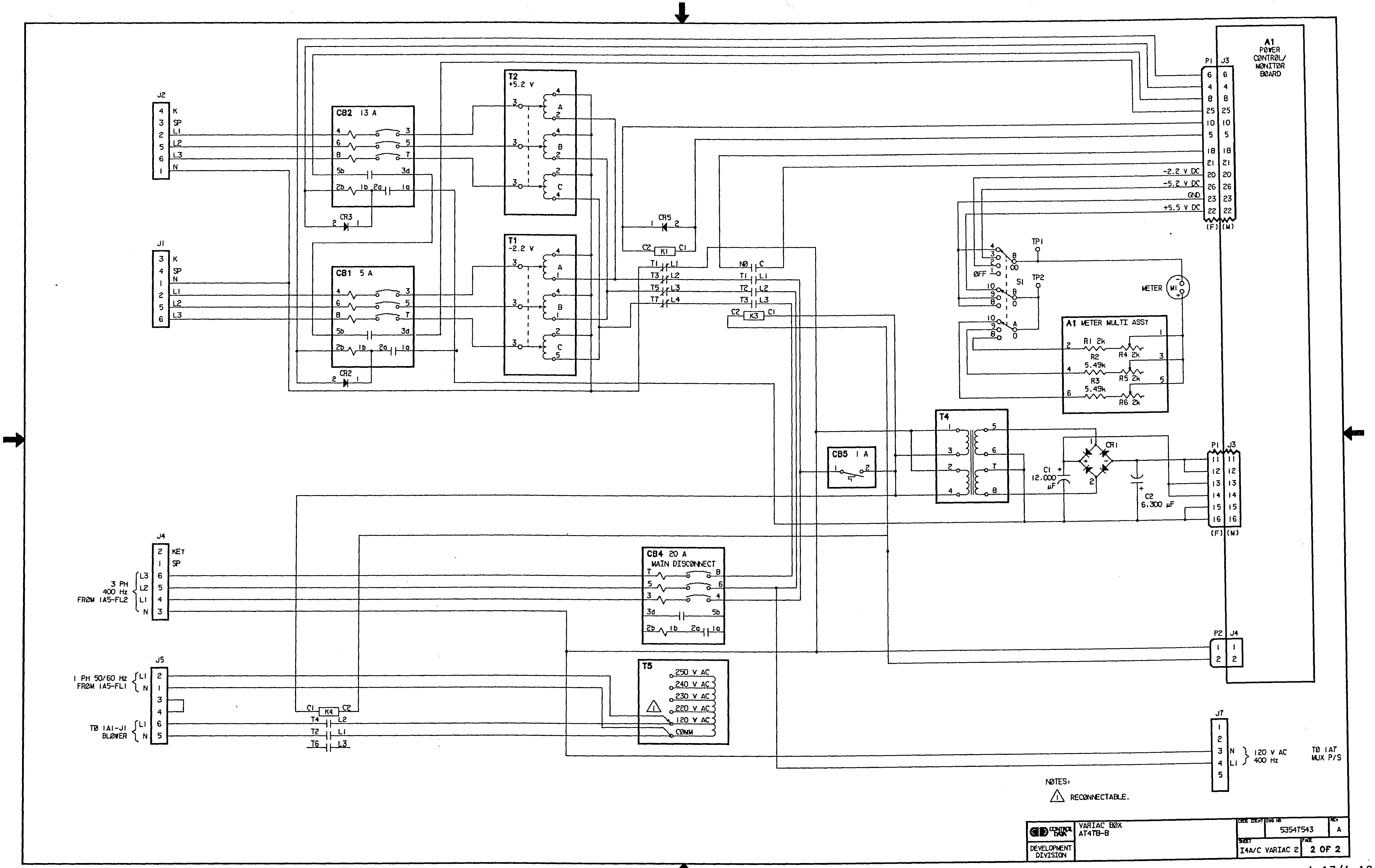
ARDEN HILLS OPERATIONS
ST. PAUL, MINN.

TITLE
VARIAC BOX
AT478-B

SIZE D
FSCM NO. 34010
DWG NO. 53547543

SCALE
SHEET I4A/C VARIAC 1
PAGE 1 OF 2

Description for the following diagram will be included in a later revision.



NOTES:

⚠ RECONNECTABLE.

CONTROL DATA

DEVELOPMENT DIVISION

VARIAC BOX
AT4T8-B

CODE IDENT
DWG NO 53547543
REV A
SHEET I4A/C VARIAC 2
PAGE 2 OF 2

PAGE		REVISION RECORD					
2	1	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	A		CLASS A RELEASED	WES	2/15/88	KWS	WDT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN ____ TOLERANCES PLACE ± ____ PLACE ± ____ ANGLES ± ____	DWN	M.E.SCHMIDT	2/15/88
	CHKD	W.D. TISCHER	3/15/88
	ENGR	W.D. TISCHER	3/15/88
	MFG	B.J. HARTWICK	3/15/88
MATERIAL	APVD	W.D. TISCHER	3/15/88
	EQUIP. NO. AT481-B		
FINISH	THIRD ANGLE PROJECTION		

DETACHED LISTS

CONTROL DATA

ARDEN HILLS OPERATIONS
ST. PAUL, MINN.

TITLE
VARIAC BOX
AT481-B/AT511-A/AT512-A

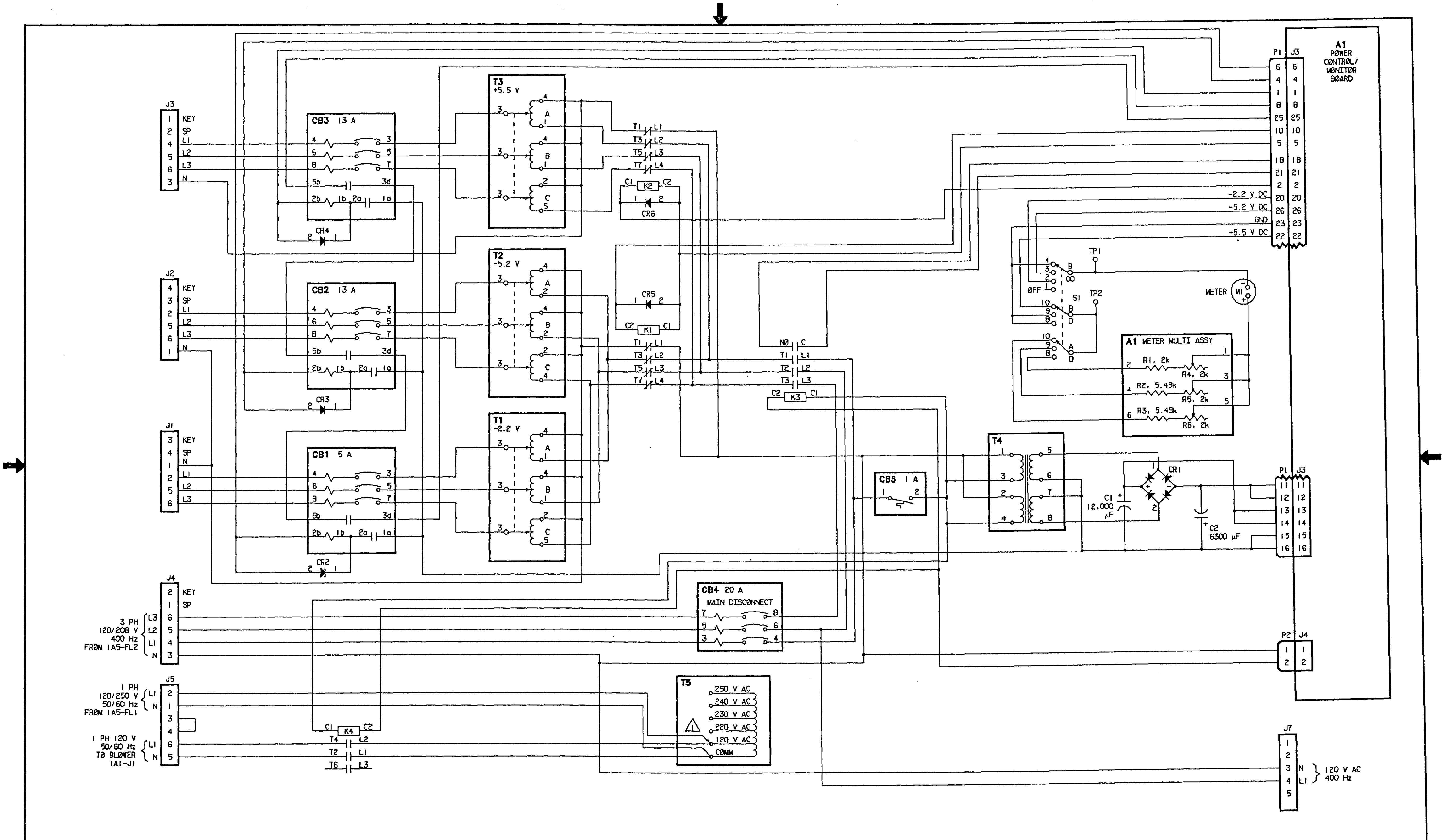
SIZE	FSCM NO.	DWG NO.
D	34010	53547590

SCALE

SHEET I4C VARIAC I

PAGE 1 OF 2

Description for the following diagram will be included in a later revision.



NOTES: △ RECONNECTABLE.

CONTROL DATA

DEVELOPMENT DIVISION

VARIAC BOX
AT481-B/AT511-A/AT512-A

CODE IDENT

DWG NO 5354T590

REV A

SHEET I4C VARIAC 2

PAGE 2 OF 2

PAGE				REVISION RECORD					
4	3	2	1	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A	A	A	A		CLASS A RELEASED	MES	3/1/88	KMS	WDT
B	A	A	B	CA45691	SEE ECO	MES	5/11/88	KMS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN TOLERANCES PLACE ± PLACE ± ANGLES ±	DWN	M E SCHMIDT	3/1/88
	CHKD	W.D. TISCHER	3/15/88
	ENGR	W.D. TISCHER	3/15/88
	MFG	B.J. HARTWICK	3/15/88
MATERIAL	APVD	W.D. TISCHER	3/15/88
FINISH	EQUIP. NO. AT481-B		
DETACHED LISTS	THIRD ANGLE PROJECTION		

CONTROL DATA

ARDEN HILLS OPERATIONS
ST. PAUL, MINN.

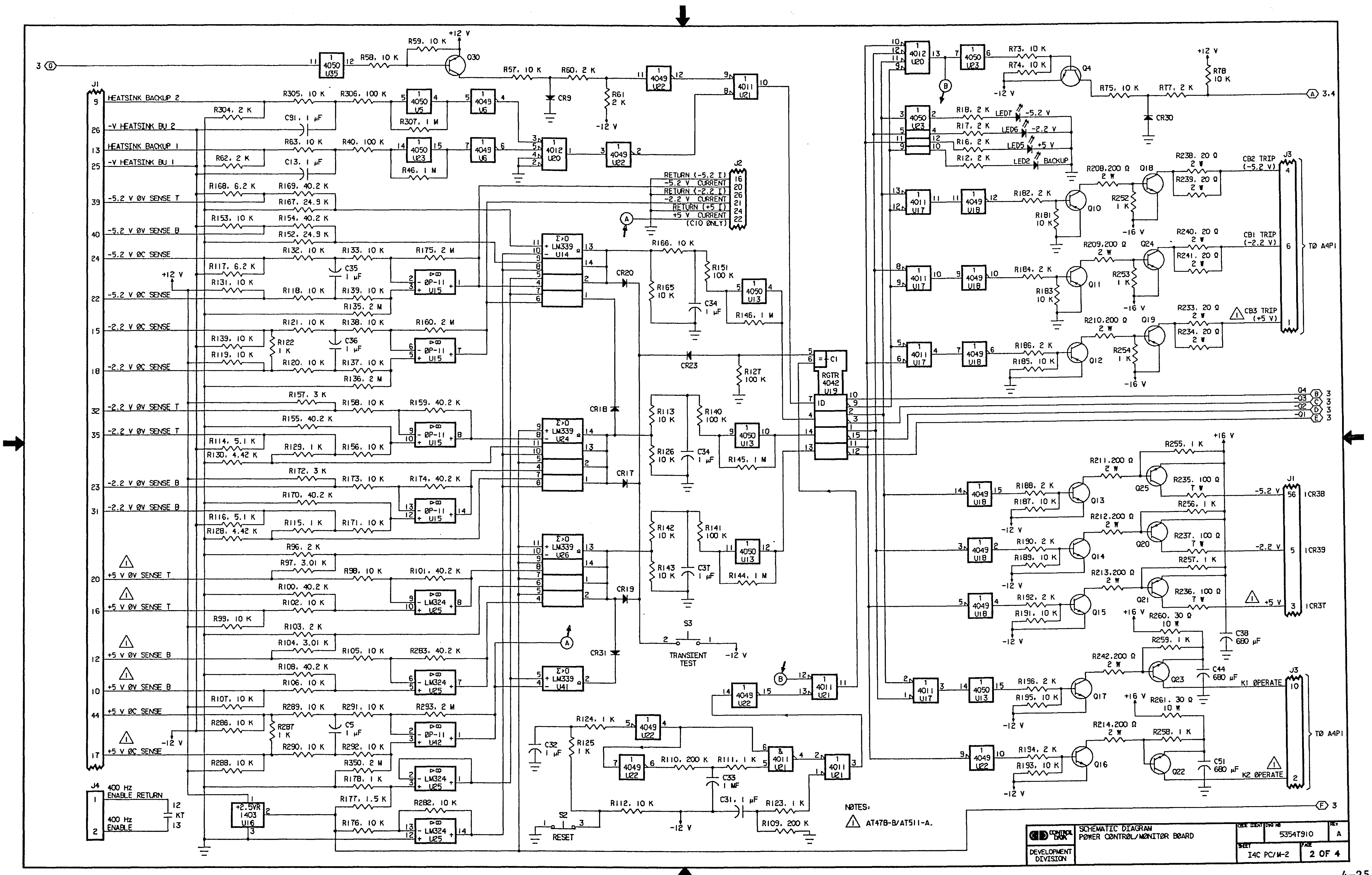
TITLE

SCHEMATIC DIAGRAM
POWER CONTROL/MONITOR BOARD

SIZE	FSCM NO.	DWG NO.
D	34010	53547910

SCALE	SHEET	PAGE
	I4C PC/M-1	1 OF 4

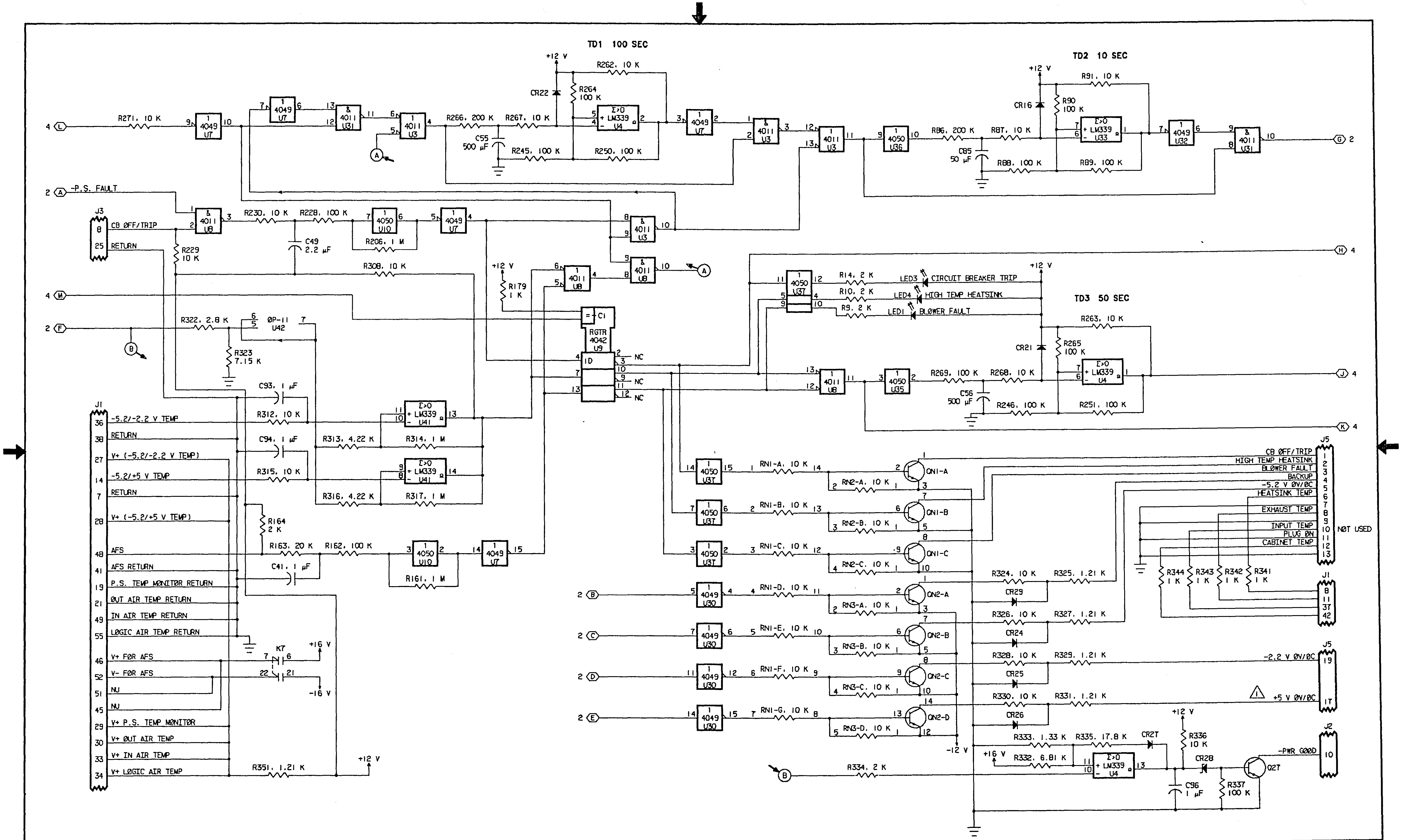
Description for the following diagram will be included in a later revision.



NOTES:
⚠ AT478-B/AT511-A.

CONTROL DATA
SCHEMATIC DIAGRAM
POWER CONTROL/MONITOR BOARD
DEVELOPMENT DIVISION
5354T910
A
I4C PC/M-2
2 OF 4

Description for the following diagram will be included in a later revision.

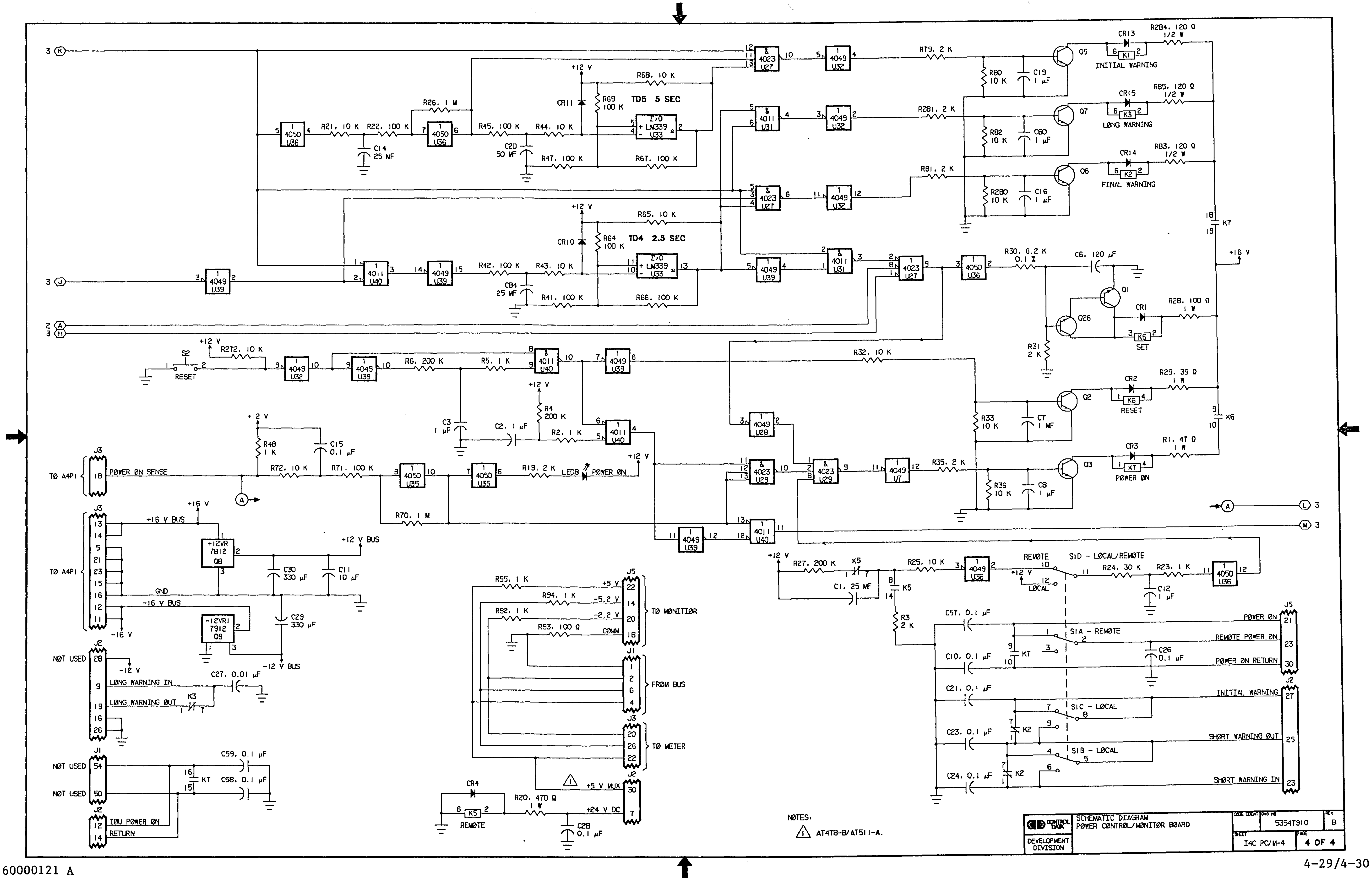


NOTES:

⚠ AT478-B/AT511-A.

CONTROL DATA	SCHEMATIC DIAGRAM POWER CONTROL/MONITOR BOARD	CODE IDENT	DWG NO 5354T910	REV A
DEVELOPMENT DIVISION		SHEET I4C PC/M-3		PAGE 3 OF 4

Description for the following diagram will be included in a later revision.



NOTES:

⚠1 AT478-B/AT511-A.

CONTROL DATA

DEVELOPMENT DIVISION

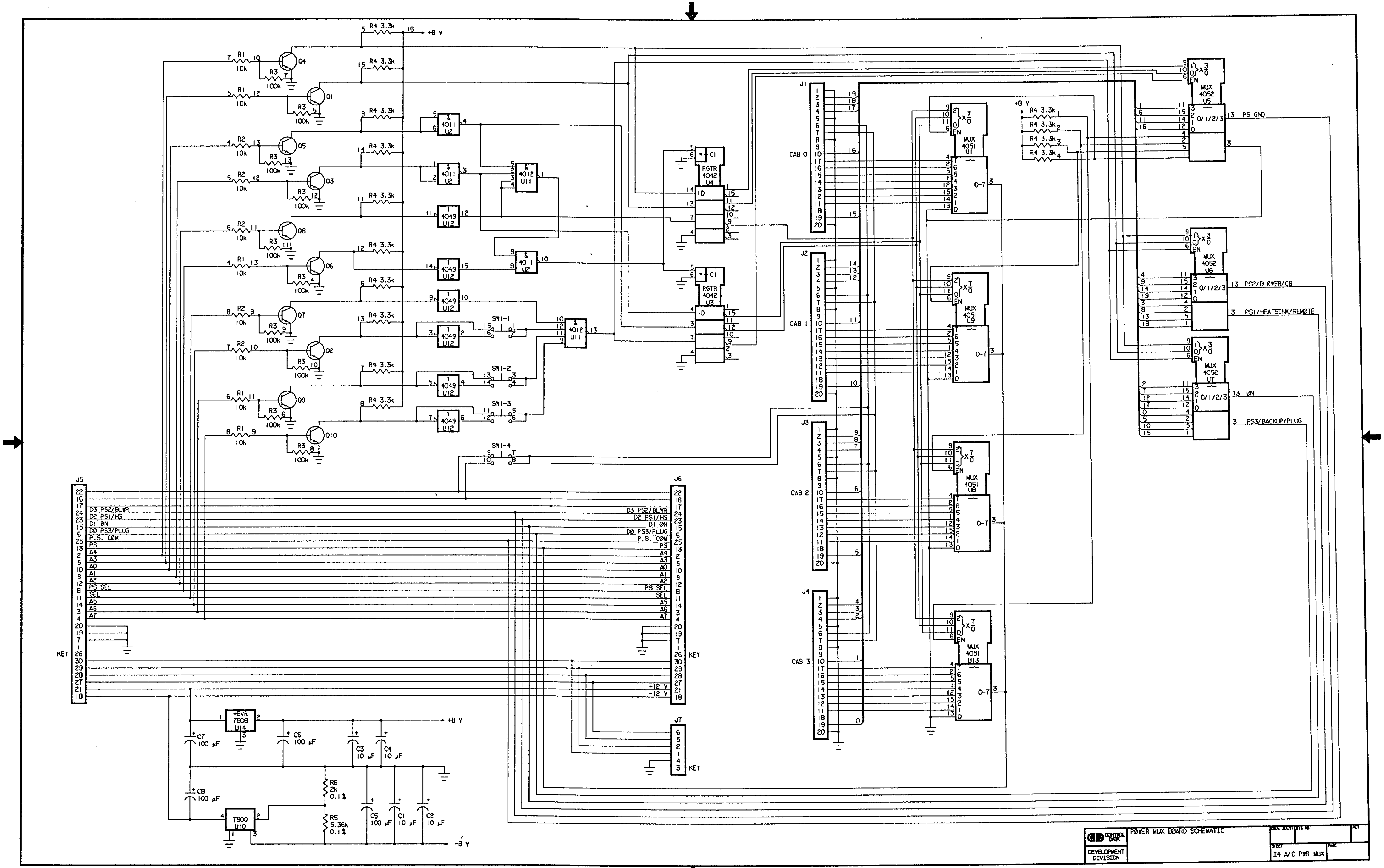
SCHEMATIC DIAGRAM
POWER CONTROL/MONITOR BOARD

5354T910 B

I4C PC/M-4 4 OF 4

POWER MULTIPLEXER MODULE

Description for the following diagram will be included in a later revision.



CONTROL DATA

DEVELOPMENT DIVISION

POWER MUX BOARD SCHEMATIC

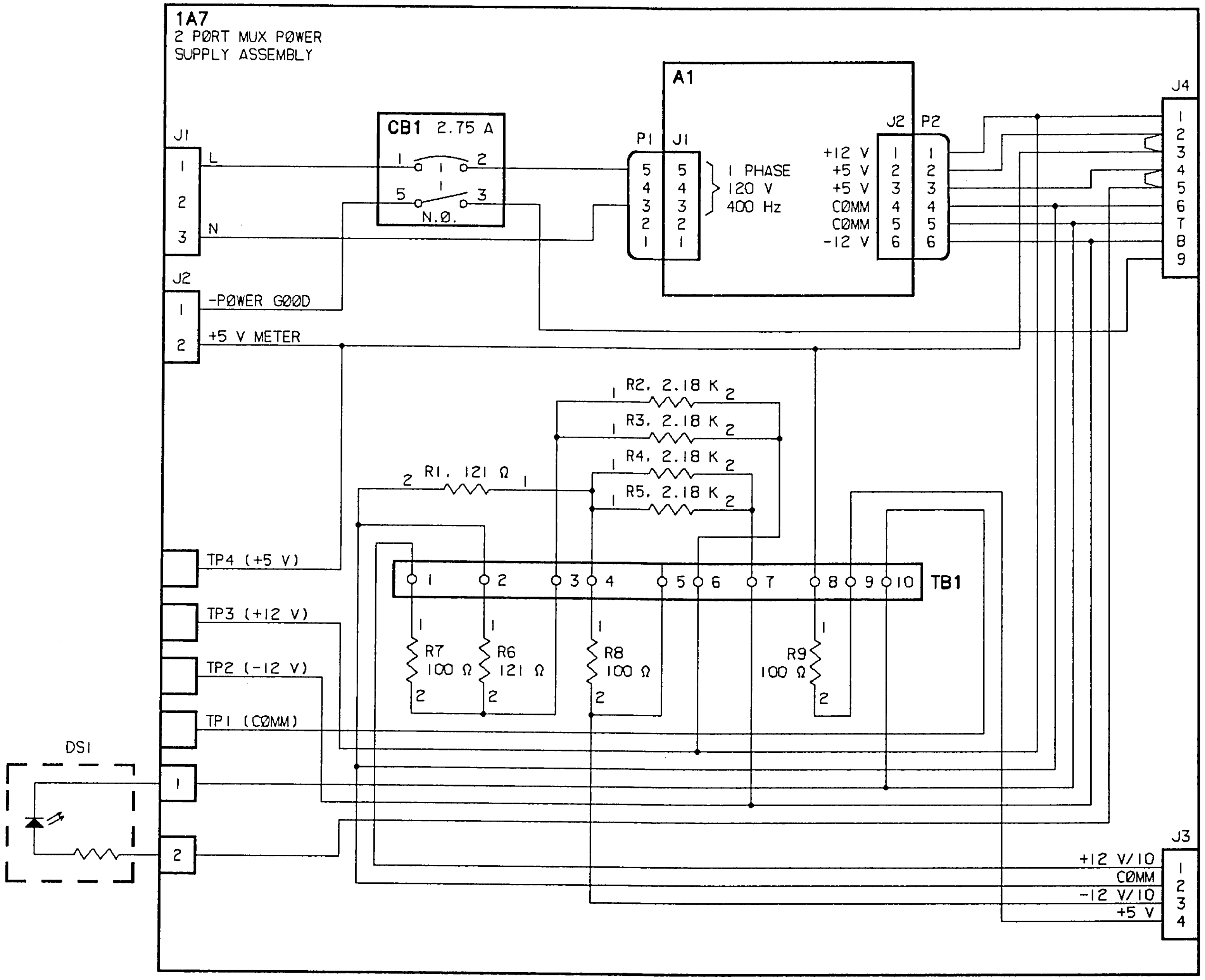
CODE IDENT | DWG NO | REV

SHEET I4 A/C PWR MUX | PAGE

MULTIPLEXER POWER SUPPLY

Description for the following diagram will be included in a later revision.

REVISION RECORD						
I	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A		CLASS A RELEASED	MES	2/25/88	KMS	WDT
B	CA49691	SEE ECO	MES	5/12/88	KMS	WDT
C	CA49806	SEE ECO	MES	7/25/88	KMS	WDT



DETACHED LISTS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN		
TOLERANCES		
PLACE ±	PLACE ±	ANGLES ±
MATERIAL		
FINISH		

DWN	M.E. SCHMIDT	2/25/88
CHKD	W.D. TISCHER	3/15/88
ENGR	W.D. TISCHER	3/15/88
MFG	B.J. HARTWICK	3/15/88
APVD	W.D. TISCHER	3/15/88

EQUIP. NO. AT478-B

THIRD ANGLE PROJECTION

CONTROL DATA

ARDEN HILLS OPERATIONS
ST. PAUL, MINN.

TITLE

TWO PORT MUX POWER SUPPLY
AT478-B/AT511-A

SIZE C FSCM NO. 34010 DWG NO. 10284114

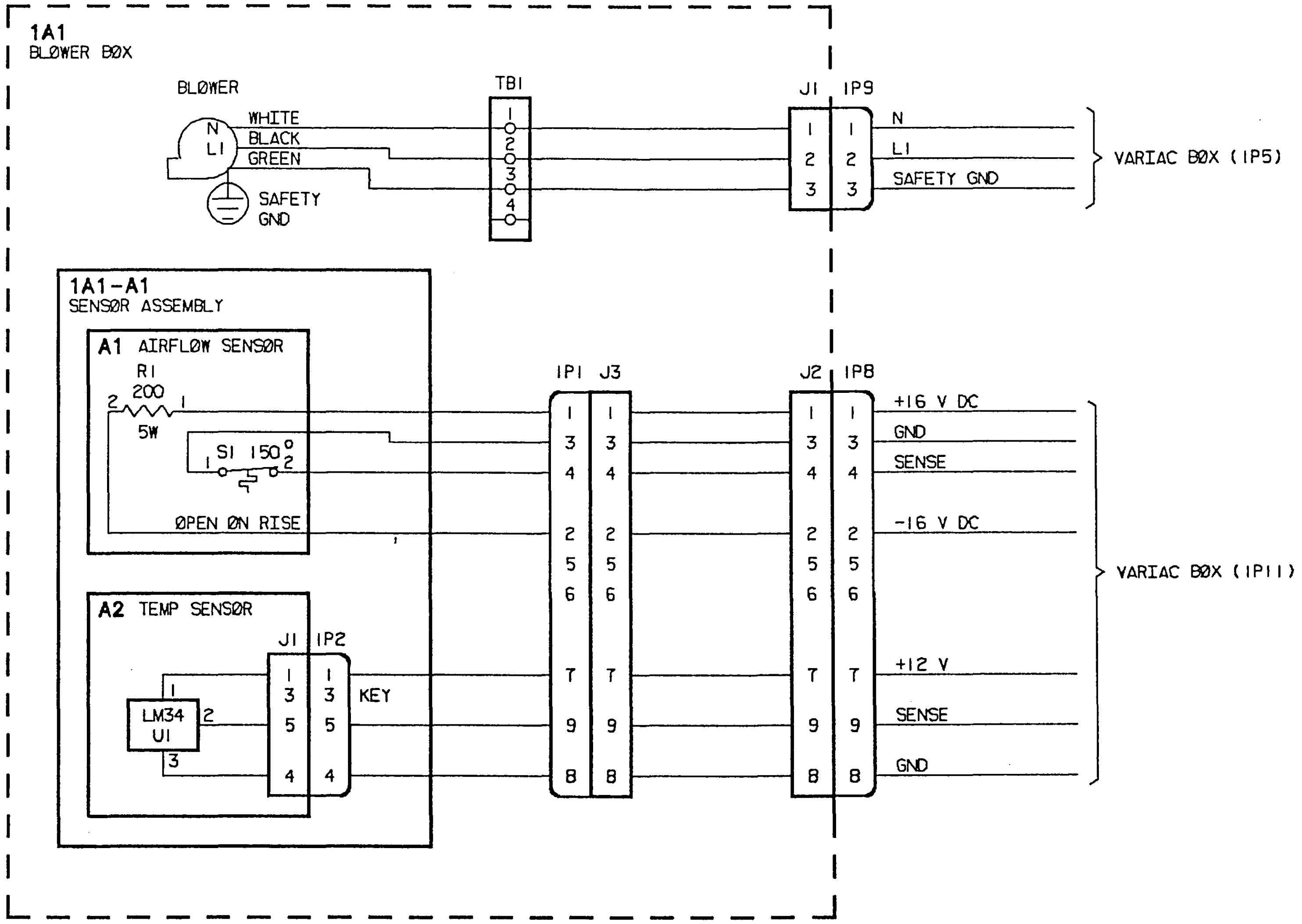
LOC: SHEET I4C TPM PAGE 1 OF 1

BLOWER ASSEMBLY

Description for the following diagram will be included in a later revision.

REVISION RECORD

I	ECO	DESCRIPTION	DRFT	DATE	CHKD	APVD
A		CLASS A RELEASED	MES	2/25/88	KMS	WDT



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I4 AIR COOLED

SIZE C FSCM NO. 34010 DWG NO. 10284115

LOC: SHEET I4C BBOX PAGE 1 OF 1

GLOSSARY

To be added at a later revision.

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